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A collection of papers from the Swannanoa Conference on Institutional Research on College Students, held at Warren Wilson College, Swannanoa, N.C., August 14–18, 1961. The conference was under the joint sponsorship of the Southern College Personnel Association and the Southern Regional Education Board.

The papers focus on selected aspects of institutional research: (1) several points of view on the important elements, problems, and outcomes of research on college students; (2) the nature and scope of current research in this area, with emphasis on studies involving personality and background variables; and (3) the approaches to interinstitutional cooperation in admissions research. Appendixes present a bibliography of some 60 titles and two case studies accompanied by three related reports.

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INSTITUTIONAL RESEARCH ON COLLEGE STUDENTS

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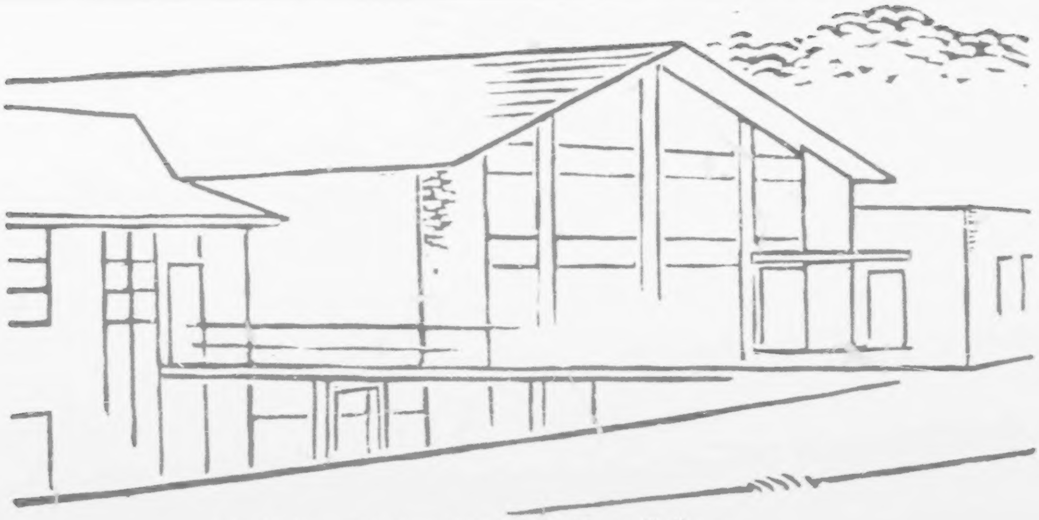

Gladfelter Building, Warren Wilson College

INSTITUTIONAL RESEARCH ON COLLEGE STUDENTS

Papers presented at Swannanoa Conference

Warren Wilson College
Swannanoa, North Carolina
August 14-18 1961

Kenneth M. Wilson, Editor

Sponsored by
SOUTHERN COLLEGE PERSONNEL ASSOCIATION
and
SOUTHERN REGIONAL EDUCATION BOARD

Financed in part by funds made available through a grant from the Carnegie Corporation

March, 1962

Foreword

As we expand opportunities for higher education, our colleges and universities face increasingly complex problems.

The Southern Regional Education Board has a continuing interest in the promotion of quality programs of research by colleges and universities on such problems as the efficient use of instructional space; the relative merits of different teaching techniques; the determination of faculty needs, functions, and morale; establishment of valid procedures for selecting, placing and counseling students; etc. Out of concern for the development of institutional research, the Board has been a co-sponsor of three regional institutes, or conferences, devoted to consideration of current research problems, issues, and techniques.

The first institute, co-sponsored by Florida State University and Florida Agricultural and Mechanical University, and the second, co-sponsored by the University of Texas, were devoted to several institutional research areas or topics, including research on college students. The third -- at which the papers which comprise the present volume were presented and discussed -- was devoted exclusively to consideration of selected aspects of institutional research on college students and was co-sponsored by the Southern College Personnel Association. It is the belief of both sponsoring organizations that the ideas and the findings contained in these papers will be of interest to all those concerned with college students.

Winfred L. Godwin
Director
Southern Regional Education Board

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Preface

Recent years have witnessed an increasing awareness of and correspondingly increased support for studies concerned with the implications of diversity in higher education -- within and among institutions -- and the differential characteristics of college student bodies not only for selecting, placing, counseling, and instructing students, but also for developing a clearer understanding of what may be termed the impact of the student on the college -- i.e., ways in which both the nature and the outcomes of the educational process on a given campus are influenced and/or circumscribed by the characteristic patterns of intellectual, personal, and social orientations represented in the student body. That different institutions -- even those of the same type -- attract, select, and retain student bodies which differ substantially with respect to a variety of educationally relevant characteristics has been persuasively documented; and the question, "Do students make the college?", is now asked in the context of research findings which do not permit us to ignore it.

Nor is it possible to ignore the fact that continuing increases in college enrollments are in prospect. Increasing demand for higher education and swelling institutional enrollments presage an almost inevitable intensification of admissions, guidance, and instructional problems -- student personnel problems, generally -- deriving not only from the increase in numbers but also from an increase in diversity or variability (again, within and among institutions) in respect to almost all educationally relevant traits, characteristics, or attributes of students: academic abilities, socio-economic background, values, career orientation, etc.

In the face of these general developments and prospects, it is important that college administrators begin now to consider carefully ways in which realistically designed and supported programs of research on students might contribute to the development of more effective instructional programs and student services, to the understanding of the student as a participant in and a molder of the educational process, and to a more accurate assessment of educational outcomes which must in the final analysis be reflected in or through the behavior of students. The Swannanoa Conference on Institutional Research on College Students, held at Warren Wilson College, Swannanoa, North Carolina, August 14-18, 1961, was designed to facilitate such consideration by serving as a forum for (a) presenting and discussing several points of view regarding some of the important elements, problems, and outcomes of "institutional research" on college students as well as the role of research on students in connection with the management, operation, and evaluation of institutional programs and services; (b) acquainting participants with research trends and with selected research projects currently under way; and (c) considering ways in which certain types of research might be facilitated through inter-institutional cooperation.

Sponsored by the Southern College Personnel Association and the Southern Regional Education Board, the Swannanoa Conference was attended by over 60 persons, most of whom were delegates of colleges and universities located in the South. Student personnel workers, admissions officers, academic deans, registrars, college presidents, and other institutional representatives participated in a varied program consisting of lectures and addresses, informal questioning and discussion, opportunities for participants to exchange information regarding research developments on their respective campuses, and discussion of cases in small groups. Case studies were considered from the point of view of identifying implications for research and on the last day of the Conference, summaries of the case discussions were presented in general sessions.

This volume includes papers prepared for presentation at the Swannanoa Conference. It includes as well two of the case studies considered and three relevant research summaries or reports (Appendix B). The case studies are reprinted here with permission of the Western Interstate Commission for Higher Education from their publication entitled Research on College Students (Boulder, Colorado: WICHE, 1960). Organization of the papers in the body of this report reflects the general design and conception of the Conference program as suggested above.

Important elements, problems, and outcomes -- in retrospect and in prospect -- of "institutional research" on college students are reflected in the papers which comprise Part I -- Rationales for Research on College Students; something of the nature and scope of research being conducted by centers or agencies for the study of higher education in the nation and in the South, and by individuals within institutional contexts in the South, with particular emphasis on studies involving student personality and/or background variables is suggested by the papers in Part II -- Research Reports and Reviews;

two approaches to deriving information of value for student guidance, selection, or placement through research in inter-institutional contexts are described in Part III -- Approaches to Inter-institutional Cooperation in Admissions Research; and the research reports in Appendix B -- two based on discussion of the Case of Kingston College and one on the Case of Rocky Mount University -- are presented not as examples of polished research proposals but rather to illustrate the scope and quality of relevant ideas which were generated by the case discussions.

The Swannanoa Conference was made possible through the cooperation of many individuals and institutions. Special mention should be made of the contribution of Dr. George Hood, Dean of Students, Stetson University, and Research Coordinator, Southern College Personnel Association, who represented the Association in all phases of planning for the Conference and served as a co-director of the Conference. For excellent presentations to the Conference, not available for inclusion in this volume, thanks are due to Dr. Harry P. Day, Assistant Dean of Students, Florida State University; to Dr. John Duggan, Director of Guidance Services, College Entrance Examination Board; and to Dr. John K. Folger, Dean of the Graduate School, Florida State University. And, to all other members of the Conference staff not included among the contributors to this volume, particularly, Miss Elaine Bogue, Research Assistant, Southern Regional Education Board, and Miss Mary Alice White, Florida State University, special thanks are due. For unparalleled warmth and hospitality in a setting of natural beauty, all concerned with the Conference are indebted to Dr. Arthur M. Bannerman, President, and the entire staff of Warren Wilson College, the host institution.

For editorial assistance and suggestions regarding the design of the volume, thanks are due to Miss Elaine Bogue and Mrs. Elsie Heid, respectively. The contribution of Mrs. Glenda Hardigg who typed the final copy is also gratefully acknowledged.

Both sponsoring organizations are pleased at the opportunity to make available to a much larger audience the papers presented at the Swannanoa Conference through their publication in this form.

Kenneth M. Wilson
Research Associate
Southern Regional Education Board

Atlanta, Georgia
February, 1962

NOTE ON SOURCES

All bibliographical references in the original papers have been consolidated and presented as Appendix A beginning on page 194. In each paper sufficient identification of references has been given to permit the reader to locate the full citation in the bibliography.

PART 1

RATIONALES FOR INSTITUTIONAL RESEARCH ON STUDENTS

Presented by

Gordon W. Blackwell, President
Florida State University

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THE IMPACT OF THE STUDENT ON THE COLLEGE*

Harold Webster
University of California, Berkeley

Higher education is increasingly a mass-education movement, with both the good and the ill that this phrase implies. Idealistically, the general level of the culture, and the efficiency of its technology, should be greatly enhanced by admitting more and more students to college. Actually, educational leaders have been aware for some time that higher education cannot grow larger without becoming increasingly complex and that we must continue to study, along with the ever-increasing enrollments, the ensuing variations in the quality of the educational process itself (McConnell, 1957).

The complexity of the situation is by now obvious. A colleague is fond of saying that each student is -- in different ways -- like _all_ other students, like _some_ other students, and like _no_ other student. This is, of course, also true of the colleges, and of the various subcultures within individual institutions. Everywhere there are interesting similarities and differences that might profitably be studied.

The Center for the Study of Higher Education in Berkeley is carrying out a number of research projects, each oriented toward providing some additional information about the rapidly increasing growth and differentiation that is now taking place within the higher education movement. These studies need not be described in detail; the Center issues Annual Reports in which they are listed and briefly described. While some of the investigations are focused on rather special kinds of colleges or unusual types of students, others concern more representative, or typical, students and institutions. The period of primary interest in these studies of college students has been the undergraduate years, but this has been extended to include data on the pre-college period and, at the other extreme, on post-graduate experiences. Much of the research concerns students of a particular year, or is focused on a specific point in their careers, but an increasing amount of it is necessarily longitudinal in nature. The difficulties inherent in longitudinal data collection and analysis are well known; they are unavoidable in most current investiations. Longitudinal work often seems quite technical and descipline-bound, but most of the Center's research has been broadly conceived, and in the long run it will focus on substance rather than method.

---

*I wish to thank Paul Heist for a critical reading of this paper and for helpful suggestions in clarifying some of the points raised.

Psychologists tend primarily to be interested in the impact of the environment on the individual. They have therefore undoubtedly contributed some distortion to the current educational picture by assuming, without much question, that the principal impact to be studied would be that of the college on the student. Students are always interesting, of course, especially when they are in the process of adapting to the college experience. Much has been learned, for example, from freshmen who are in a state of adjustment or confusion. But in the present period of rapid growth and change in higher education, it is difficult to know who is subjected to the greater "impact" during the freshman year, the incoming students or the rest of the college. In particular, if faculty and administrators are greatly affected by students, then this necessarily becomes an important aspect of the educational process. On this point it is interesting that there seems to be an increasing preoccupation among research personnel with "studying the faculty." It is recognized that the effectiveness of the faculty can vary greatly, depending on the kinds of students with whom they must work.

Colleges may have been more influenced by their students than is generally realized or admitted. Two years ago a survey of educational and psychological research was undertaken, of studies ostensibly aimed at understanding changes that occur in college students, (Webster, Freedman, and Heist, in press). It soon became apparent that in nearly all this research the investigators had superimposed three kinds of problems, sometimes unavoidably. Each of these problems has been described, at one time or another, as an "educational effect," or, by sociologists, as the cause or source of an "outcome." The three problems are:

a) The changing cultural, or social, conditions in the larger society

b) The varying characteristics among students

c) The varying characteristics of educational programs, and of the intellectual climates of colleges and college subcultures.

Research has been more concerned with b and c, but we know that the results can be influenced by a, the changing cultural conditions. For example, a kind of "liberalization" that developed gradually in the thinking of most students during their college careers was reported by investigators in this country during the Thirties (e.g., Arsenian, 1943; Hunter, 1942; Jones, 1938; Kuhlen, 1941; Nelson, 1938; Newcomb, 1943; Pressey, 1946). And a similar phenomenon has been identified in more recent longitudinal studies (by Dressel and Mayhew, 1954; Dressel, et al., 1958; Florence, 1947; Freedman, 1960; Hammond, 1959; Heath, 1959; Plant, 1958; Sanford, et al., 1956; Webster, 1958; and by others). But a moment's reflection, especially by those who recall what it was like to attend college during the Thirties, suggests ways in which this growth of tolerance, liberalism, independence, etc., of the depression years differed from that which has been observed in students since World War II. The "liberals" of Jacob's report (1957) are rather different from the earlier "liberals," both in number and in kind. Surely this is a topic on which there should be more collaboration between historians and social scientists.

Topic a above, the changing cultural conditions, can therefore serve as a reminder that colleges are influenced by the succession of entering freshmen classes, each of which represents a new segment of a common culture that is in continuous and variable process of change. A practical result of this, for those who are engaged in institutional research, is that it may be useful to collect cross-sectional data from each new class of freshmen, whether or not each class is also studied longitudinally. Changes in the characteristics of the entering freshmen may be rather large in colleges today, even over a period of three or four years, and some of this change will be related to shifts in the problems and values within the larger culture. Data from alumni of different decades also offer interesting possibilities for assessing long-term educational and cultural trends. For example, to judge from Freedman's studies of alumni (in press), certain values that are relatively permanent in individuals will vary according to both the decade of graduation and the college experiences that were peculiar to that period.

Although some of the annual changes in the characteristics of freshmen classes may reflect general cultural trends, other changes will be more dependent upon specific selection practices or effects. With the increasing pressure from applicants, selection effects require careful study. Admissions officers have been attempting to understand the dual character of "selection" for admission, that is, the fact that much selection also occurs at the application level. Clark (1959) has noted that for colleges with distinctive public images the selection ratio is an inadequate index of the selection process. For example, Reed College has such a distinctive public image, throughout Oregon and the nation as a whole, that applications are predominantly from distinctive kinds of students.

It seems unlikely, however, that information about colleges will ever reach such a high level of specificity, in a form suitable for widely effective communication, that applicants will become unusually homogeneous on the more important personality variables. Differences among freshman classes at the numerous colleges are certainly impressive, and significant differences are found on a variety of characteristics. But the variations among the students within single institutions also remain surprisingly large, even at the high selective colleges (McConnell and Heist, 1959; Heist, 1960a, 1960b). Perhaps it should again be emphasized that even among students with identical aptitude scores, within single institutions, there are large variations on other personality characteristics.

Topic b, the varying characteristics among students, has interested educators for at least two reasons. First, initial student characteristics are related to later performance; they include motivational and cognitive traits that appear to be crucial in the educational process and, more importantly, that may be modified by it. But secondly, Topic c -- the varying characteristics of college programs and climates -- is directly dependent upon student characteristics. For example, in the Vassar College research, it was found that the student culture was the principal educational influence (Freedman, 1956). From work at the Center it is now clear that colleges, for which the freshman mean academic aptitude scores differ by a standard deviation or more, necessarily support quite different intellectual climates. Faculty and students alike must be greatly influenced by this kind of variation. Pace and Stern (1958) have also isolated student characteristics that can be important in determining the character of a college.

The fact that students have a marked influence on the college is reason enough to consider student characteristics in more detail. For if we are to understand the influence of students, then we must continue to broaden our understanding of differences among them, and of the varying ways in which they experience the educational process. It is sometimes convenient to consider student characteristics from two viewpoints: first, there are "prerequisites" for academic performance and for adequate support of a climate that characterizes the institution; second, there are also desirable student characteristics that, as educators, we hope will improve, or increase, with college experience. Speaking rather loosely, these correspond to the "statics" and to the "dynamics," respectively, of the educational process. In some cases the same measured characteristics will be relevant for both approaches to the educational process, the static and the dynamic.

Consider first the characteristic, general intelligence, a trait that has had a long history of being regarded as static, or as relatively unchanging, especially in adults. One result of our more recent knowledge about the maturation of intelligence seems to have been overlooked by colleges: freshmen vary considerably in the rates at which their intelligence is still maturing. Some students will not continue to gain in mental ability, having already reached a plateau before entering college. Others, on the contrary, still have a long way to go in this respect. It may come as a surprise that the data show that it is the very able, or the most gifted, freshmen who will in the future experience the most maturing of mental ability. The longitudinal curves show, for example, that those who are a standard deviation or more above average intelligence are further, both in years and in intelligence, from their points of maximum development, by comparison with others the same age (e.g., Bayley and Oden, 1955; Bayley, 1956).

Now it seems that this fact, especially when it is combined with what we are now learning about the maturation of the so-called noncognitive characteristics, should be very helpful in understanding both the educational process and, to some degree, the impact of students on a college. An instructor who is confronted by a freshman of obviously high intelligence should know that most persons like this are less mature, in terms of their own potential, than other students of the same age. A common fallacy is of course, that "the gifted mature early," but teachers should be able to make some use of the fact that it is ordinarily the less gifted students in whom maturity has already taken its greatest toll by age 18 or 20. This could have important implications for differential education, for example, for the administration and organization of honors programs.

A second fallacy that has had important consequences in our attempts to understand students is that there are clearly separable, or independent, personality characteristics. To some extent this myth has been perpetuated by applied statisticians who have reified orthogonal factors, or composites of mental test scores. It is one thing to isolate a weighted composite of scores with known mathematical properties, another to use it to represent an actual process that takes place within personality. There is evidence that both cognitive and motivational personality processes exist, and it is today easy to administer one set of tests that have "right" or "wrong" answers and another set that do not, in order to attempt to measure these two kinds of personality syndrome. But the idea that the two processes function independently within individuals is contrary to common knowledge. For example, the desire to answer a test question correctly is not, in general, independent of one's knowledge of the answer. The motivational and cognitive aspects of personality are related, even though at the present time the relationships are usually not well understood.

It should therefore not be surprising if it is found, for example, that attitude scores are correlated with verbal or mathematical aptitude scores. At the risk of seeming overly technical, I will discuss further some of these basic research problems that necessarily require the use of mental tests. (Later we will return to more practical issues.) One can construct mental tests with widely varying properties. An infinite number of such tests is possible, but the basic problem is to determine which among them most usefully reflect actual student functioning. This is really a very difficult basic research problem to which there are, as yet, no entirely satisfactory answers. For example, the motivation measures of interest in educational research today are not easy to discuss, and this is partly due to lack of clarity in the meaning of such terms as need, motive, drive, etc. We do not really understand "motivation." Nevertheless, a great variety of instruments of varying quality for measuring the interests, values, beliefs, attitudes, etc., that are usually related to educational goals, are available and these are often referred to, quite generally, as "motivational." These kinds of tests are proving to be useful in attempts to understand the educational process.

Although interest inventories have a long history of successful use by counselors, they are not without weaknesses. One shortcoming is that the specificity of interest test items and patterns may elicit from subjects the same stereotyped projections over a long period of time. Expressed interests that are not actually related to a student's experiences while in college may have little to do with his actual functioning or development

(Dressel, 1954). For example, the fact that a student indicates throughout his college years that he thinks that he would like the work of a lawyer, of an explorer, etc., may have little to do with the actual work of lawyers and explorers, and the student's knowledge of such work. His responses may instead represent idiosyncratic preconceptions, realistic or unrealistic, about lawyers and explorers; how these kinds of preconceptions are affected by later experiences is a matter for further study (Matteson, 1955).

On the other hand, many attitude and personality scale items have an opposite kind of limitation: they suffer from overgenerality, or from vagueness. This seems especially true of some of the self-reference items, for example, "I find that I have difficulty in dealing with most people" (answered "true" or "false"). Some of the personality scale items that are most useful empirically, for example, "I don't like modern art," cannot escape a charge of vagueness. This item might be endorsed because the student is a traditionalist who is suspicious of almost all things modern, or else it might be endorsed primarily because he prefers science, history, etc., to art. Despite this limitation, this item discriminates various important student groups much more effectively than most items which seem less ambiguous.

In the absence of clear knowledge about how motives are expressed verbally, it is probably best not to rely upon the "face validity" of the test items, but instead to use other kinds of validity; for example, to depend upon the usefulness of the items in discriminating actual groups that have relatively well-known characteristics. It is usually found that test items that have been pulled together empirically, in extensive studies of students, will make sense theoretically; that is, will discriminate definitive groups in expected ways. Reliabilities of some of our attitude tests now exceed those of most cognitive tests.

In view of the current outcry in some parts of the country against mental testing in the schools, it is hardly necessary to suggest that test material should be used prudently. The public could be kept better informed, however, about the usefulness of mental tests in longitudinal educational research. A good test is a measuring device, the primary purpose of which is to order persons from a low to a high amount on some characteristic possessed in common. If the reliability of the test is high, then the ordering is precise; that is, it contains few erroneous inversions. Tests are used to order subjects on numerous characteristics -- information, aptitudes, attitudes, and the like -- because no better tools for this comparative purpose are known. Advances in most sciences have depended upon refinements in measurement. If we wish to determine the relative amounts of change experienced by students during college, or by various classes or groups of students, then it seems that highly reliable tests are essential.

In work at the Center that utilizes test results, we have become aware of the importance of the complexity of any student characteristic that is to be represented by a single total test score. Psychologists have been divided, for example, over the question of whether intelligence should be measured globally, as "general ability," or whether it is best understood as several "primary mental abilities." The same kind of debate now occurs in many quarters with respect to other syndromes of personality; for example, the stereopathy (authoritarianism) attitude syndrome, and the suppression (response set) syndrome. The usefulness of such measures, whether global or specific, in differentiating various criteria of educational significance will eventually decide these kinds of issues. It is important, in the meantime, never to lose sight of the fact that the characteristics measured exist in the students themselves; one should not fall into the error of studying tests so closely, with a view toward improving them, that the subjects are ignored.

To outline the problems that have been discussed before proceeding further: Colleges are struggling to accommodate larger and more heterogeneous student bodies than ever before. College characteristics reflect in large degree the impact of characteristics of particular students. The educational process itself is greatly affected by student characteristics, and if we are to increase our knowledge of how students can influence a college, then we must learn more about students. (For example, it is not enough to go on improving the prediction of academic grades, a criterion with a great many known limitations.) Student characteristics may be regarded either as "static" (i.e., prerequisite to some kind of performance) or as "dynamic" (i.e., changing, or developmental), depending upon what we have in mind at the time. Even general intelligence has a dynamic, as well as a static interpretation, especially for the more intelligent students. But general intelligence and other cognitive characteristics are not independent of the "noncognitive," or motivational characteristics. The latter are in fact quite complicated, and we have scarcely begun to understand them. We shall increase our understanding of the educational process to the extent that it is possible to improve the measurement of personality characteristics, especially those characteristics that change during college.

It is also possible to improve educational practices with the help of measures of cognitive and motivational functioning. After a suggestion concerning one such application of mental tests for solving a problem of differential education, some data will be presented to raise more general questions about the effectiveness of higher education. It is likely that an important impact of students on instructors today is a negative one arising from difficulties experienced in attempting to teach classes that are of average ability, motivation and maturity, but that are, nevertheless, exceedingly heterogeneous on one or more of these kinds of personality characteristics. Sheer class size will aggravate the problem. (We recall that the statistic known as the range is not independent of sample size.) Research suggests (Stern, 1960; Gladstein, 1957; Del Popolo, 1960; and others) that the problem of teaching overly-diverse classes might be alleviated quite simply by pretesting students and then forming classes that are more homogeneous in characteristics. This solution might fail in some institutions where it would present social or administrative problems, but at least it has the merit of directness and simplicity. An alternative solution, provided classes are relatively small, would be to find a way to educate instructors so that they would more easily recognize and appreciate great diversity in their students. Then there is, of course, a third approach that has been utilized with increasing frequency in many institutions today, namely, the initiation of honors programs or programs for independent study. Most readers are probably acquainted with The Superior Student, edited by J. W. Cohen at the University of Colorado, in which are described a variety of current experiences with honors programs in various institutions. Testing might have a legitimate function in the management of honors programs, even if the tests employed are not suitable for continuous use in more general selection or admissions programs.

One of the central projects at the Center is a longitudinal study of eight institutions in which educators, sociologists and psychologists are collaborating.* In four of the institutions, samples of students and of other college community personnel are being interviewed periodically. Other data, including questionnaire responses, mental test scores and autobiographies, have also been obtained. Three of the colleges are relatively selective, private liberal arts colleges; the fourth is a large, rapidly growing, public college. An experiment was carried out, based upon some of the data from this larger study (Webster, Heist and Williams, 1960). Three of us attempted to classify 146 students attending the four colleges according to the degree of desirable change, that is, of development, during this first year at college. The classifications were made by using interview protocols (including standard interview ratings) collected from the same students, first as freshmen, later as sophomores, and from a study of autobiographies that most of the subjects had written as freshmen. The criterion for change that was "desirable," as opposed to other change, was that it should be in the direction of the developmental goals generally approved by liberal arts faculty. The ratings from the two interviews with each person played some part in defining the presence or absence of student characteristics regarded as desirable. Although these ratings were not as important for use in making final judgments as the extensive written material, they do seem to summarize fairly well the criteria we had in mind. They include such characteristics as scholarly values and interests, personal independence, realism, complexity, flexibility and adaptability, and the absence of ethnocentrism.

---

*Members of the senior staff include T. R. McConnell, chairman, Burton Clark and Martin Trow, sociologists, Paul Heist and Harold Webster, psychologists. The study is supported by the Carnegie Corporation.

The first problem that arose was that in about one out of every six or seven cases it seemed impossible to assign the student to one of the three categories, No Change, Some Change, and Much Change. Most of these unclassifiable subjects appeared to have become so involved in personal difficulties (usually centered on their families) that an "Arrested Change" category was added for them. The three investigators working independently then achieved moderate agreement on the classifications (see Table 1).

After classifying these sophomores, the differences between the four groups were studied in more detail. For example, means and standard deviations were computed for the groups on some cognitive and motivation test scores. The tests had been administered within a short time after the students had arrived at college in the freshman year. Some results are set forth in Tables 1 and 2a-2d (a description of the relevant motivation measures appears in

Table 1*

Frequencies of Students in the Four Change Categories

(N = 146)

Change category	Private college no. 1	Private college no. 2	Private college no. 3	Public college
No change	9	10	12	15
Arrested change	6	-	10	4
Some change	20	14	12	7
Much change	10	5	9	3
Totals	45	29	43	29

*Tables 1 and 2a-2d are adapted from Webster, H.; Heist, P.; and Williams, Phoebe, "Value Contrasts Between Family and College, and the Effect on Student Development." Paper read at the American Psychological Association, Chicago, 1960.

Table 2a

Aptitude and Personality Scores for the Four Change Categories in Private College No. 1 (N = 44[a])

Change category		Aptitude measures		Personality scales												
		SAT-V	SAT-M	NA	SM	AA	DS	Co	RS	SF	Es	TO	TI	SI	MF	IE
No change (N = 9)	M	544	526	12	83	32	33	28	84	40	24	46	27	24	49	47
	SD	84	44	3	17	11	10	8	19	12	9	12	6	6	10	19
Arrested change (N = 5)	M	588	506	14	104	28	38	41	79	45	37	57	26	20	37	55
	SD	68	39	2	6	12	8	5	21	13	5	7	1	7	9	20
Some change (N = 20)	M	583	565	12	94	29	37	35	71	46	30	53	27	25	44	55
	SD	68	74	3	16	11	13	8	17	16	9	10	7	14	11	16
Much change (N = 10)	M	660	636	15	102	32	39	42	76	44	36	64	28	25	46	55
	SD	78	84	3	16	10	11	7	16	16	9	7	8	20	9	17

[a] The decreased N is due to incomplete data for some of the students. (The same is the case in subsequent tables.)

Table 2b

Aptitude and Personality Scores for the Four Change Categories in Private College No. 2 (N =29)

Change		Aptitude measures		Personality scales													
category		SAT-V	SAT-M	NA	SM	AA	DS	Co	RS	SF	Es	TO	TI	SI	MF	IE
No change (N = 10)	M	595	630	14	100	33	38	38	83	39	31	60	41	20	52	56
	SD	87	73	30	18	8	11	11	19	12	10	8	9	11	12	20
Arrested change (N = 0)	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Some change (N = 14)	M	619	619	13	97	35	41	41	63	57	34	60	41	24	50	69
	SD	86	120	4	10	9	9	7	15	14	8	10	9	9	9	13
Much change (N = 5)	M	615	614	15	92	28	37	37	80	44	35	66	47	27	54	50
	SD	75	91	1	23	5	5	5	19	11	3	5	3	4	7	14

Table 2c

Aptitude and Personality Scores for the Four Change
Categories in Private College No. 3 (N = 41)

Change		Aptitude measures		Personality scales												
category		SAT-V	SAT-M	NA	SM	AA	DS	Co	RS	SF	Es	TO	TI	SI	MF	IE
No change (N = 11)	M	640	654	12	93	31	34	31	71	42	29	52	39	25	50	47
	SD	79	57	2	11	7	10	8	26	15	8	6	8	9	12	14
Arrested change (N = 10)	M	649	669	14	103	33	39	38	65	44	34	56	45	19	48	54
	SD	72	104	2	11	7	8	6	25	8	4	14	8	7	11	7
Some change (N = 11)	M	678	664	15	106	34	39	38	82	55	32	59	44	22	47	50
	SD	111	92	2	13	10	12	7	20	23	7	8	7	9	11	16
Much change (N = 9)	M	718	660	14	108	33	43	43	74	43	35	57	44	18	41	58
	SD	41	84	1	9	6	8	8	20	14	8	7	7	8	7	15

Table 2d

Aptitude and Personality Scores for the Four Change Categories in the Public College (N = 27)

Change category		Aptitude measures		Personality scales													
		SAT-V	SAT-M	NA	SM	AA	DS	Co	RS	SF	Es	TO	TI	SI	MF	IE
No change (N = 15)	M	497	452	10	68	22	27	24	78	40	20	38	28	19	47	44
	SD	60	102	4	23	14	10	9	22	16	8	15	8	7	10	17
Arrested change (N = 3)	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Some change (N = 7)	M	540	495	13	86	30	36	35	51	53	29	41	34	23	38	66
	SD	38	75	2	13	9	10	12	20	20	8	15	10	8	10	16
Much change (N = 2)	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Attachment A). It is interesting that there is a significant tendency (.05 level) for Nonchangers to be found, proportionately more often, at the public college.

But the result that interested us most was the increase in the mental test scores over the change categories in the tables. It appears from these data that the higher the initial personality and aptitude scale scores, the greater the subsequent change in the desired direction. This agrees with the other finding, discussed earlier, concerning the differential maturation of intelligence. The interpretation of these results has a bearing upon the general question of the effectiveness of higher education. For such findings permit us to examine in more detail the extent to which the educational process in an institution is finally determined by *initial* student characteristics.

Does it matter in a college if the students are predominantly the flexible, developing kind, or if instead most of them have already reached a point where their beliefs, values and approaches to knowledge are relatively static or unchanging? Either type of student might profit in some way from education beyond high school. It seems, however, that there are at least two reasons for distinguishing between the two kinds of students: we should like to understand their effect upon the educational climate, or atmosphere, of institutions; and we would also make use of the fact that their needs differ in the effort to improve their education.

In some institutions a shift from 40 per cent to 60 per cent in the relative numbers of Changers, as distinct from Nonchangers, might greatly improve both the intellectual climate of the college and the morale of the faculty. But the second point, regarding the possibilities for differential education of the two kinds of students, seems even more important. Such a problem cannot be attacked intelligently without first utilizing what has been learned about student development during college, and about the growth in personal and in intellectual independence that this process of development entails.

The liberalization, or development, that occurs in most college students was referred to earlier. What is the nature of this process? Current research is still focused upon this question, but it is well established that most students who have been studied at age 17 or 18 are different when seen a year or two later, and that the changes are related, as in the experiment described above, to the goals of education. In the experiment described, a sharply distinguishing feature in the autobiographies between Changers and Nonchangers was that the former, unlike the latter, described themselves as having been independent. It is usually agreed by faculty that college education should help a student to become a more independent thinker. Now personality theorists believe that growth in independence, or autonomy, is indeed a key to understanding the process of development in this age-group; but it is psychological independence that they have in mind. This is what they mean when they refer to "sense of identity," or "ego strength," or "autonomy" (Erikson, 1956; White, 1952; Bettelheim, 1960; Sanford, 1959). For example, some freshmen who travel far from home to attend college nevertheless remain almost entirely dependent upon parental values and standards; but in general this is not the case, for data indicate that independence geographically is usually accompanied by some increment in psychological independence. It is a truism among counselors, of course, that dependence may be reflected by either too much rebellion against, or too easy an acceptance of, authority. Some students will achieve high grades primarily to please parents or other authorities, and this is evidence of dependence. On the other hand, rebelliousness, even if accompanied by academic failure, is often evidence that a struggle for personal independence is taking place. Once achieved, a degree of independence is reflected by the kind of thinking that the student is capable of sustaining. After some minimum degree of autonomy or independence has been achieved, genuine scholarly interests can be developed and sustained.

For convenience we have isolated several large dimensions, or syndromes, that can be measured reliably by personality scales. Two of these dimensions seem more important than the others (see Table 3 and Attachment A). First, there is the developmental, or growth, process itself, comprising a number of changing and correlated subprocesses. Second, there is a kind of general inhibitory process that may be partly a reaction to the development. Development takes place in social, intellectual and esthetic domains; it can be measured at the attitude level by scales such as _Social Maturity_, _Thinking Introversion_, and _Estheticism_. College persons who score high on these first-dimension tests, that is, on the developmental, or "Attitude Growth" dimension, are likely to be both nonauthoritarian and seriously interested in intellectual or esthetic problems. The second dimension is a bit like the one that educators have in mind when they emphasize either self-discipline and prudence, or, on the contrary, spontaneity, originality, and lack of inhibition. Although this inhibitory process is still not well understood, low scorers on the _Schizoid Functioning_ and _Impulse Expression_ scales, and high

Table 3

First of Two Principal Components for Seven Mental Tests, Administered to 372 Freshmen Attending Four Colleges *

	I: Growth	II: Inhibition
Repression and Suppression (RS)	-.18	.88
Impulse Expression (IE)	.61	-.68
Social Maturity (SM)	.88	.09
Estheticism (Es)	.78	-.03
Thinking Introversion (TI)	.83	.24
SAT - Verbal	.70	.27
SAT - Mathematical	.49	.27
Per Cent Variance	46	21

*One of several components analyses, using from 5 to 13 measures, for matrices both corrected and uncorrected for attenuation. The matrix analyzed here was uncorrected. The first two components can be more clearly defined, either by increasing the numbers of personality tests used, or by small rotations (orthogonal or nonorthogonal) of these principal axes. Such operations are unnecessary, however, to discover the two underlying dimensions.

scorers on a response set scale, Repression and Suppression, tend, by comparison with others, to be overcontrolled or inhibited. It is characteristic of college students, and especially of freshmen, that they often think of their own behavior in relation to the controls that are imposed or relaxed within varying situations.

Colleges differ widely in how their freshmen score on these dimensions. Variations among mean scores on the Attitude Growth syndrome are particularly striking, often exceeding two standard deviations. Thus, the impact of students upon colleges cannot possibly be uniform. For at some institutions a large majority of the students are already comparatively advanced in intellectual and emotional development. (And as we have seen, at this age there is reason to expect even more development in such individuals.) Educational programs and goals, which vary both between and within institutions, must therefore be affected greatly by these kinds of student characteristics.

It is perhaps unnecessary to add another topic to this paper. Nevertheless, one aspect of institutional research might at least be mentioned. Here I refer to what some social psychologists used to call the "action effect" of research. Administrators know that it is impossible to study any social organization closely without exerting some immediate effect upon it. The mere process of asking interview questions invariably raises issues of importance in a college, and this is likely to have some general and immediate influence. Some action effect is probably necessary to carry out any institutional research, even though an attempt is usually made to minimize it. It is often supposed that the "true" institutional changes are those that would occur anyway, regardless of the presence or absence of a research team or institute on campus, and that it is these true changes that are of primary interest. And this may be so -- it has remained a debatable point. But in any case it is difficult to see how additional effects due to the research activity itself could be ruled out. The development of students and their reciprocal effect upon the development of the college may be enhanced or hindered by certain kinds of research activity. In this respect we are like those physicists who cannot avoid disturbing, by means of their observations, the phenomena they would like to observe in an undisturbed state. There is also an analogy with certain kinds of research on psychotherapy.

My own view of the immediate influence of the research operation itself on an institution is that in general it need not be great, and that to the extent that it arises it can be positive. In at least one case an immediate effect of some discussions of research findings, concerning science majors, at science faculty meetings, seemed to have been beneficial (Webster, 1957b). As more institutions subject themselves to investigation by social scientists, more will be learned about the immediate, as opposed to the long-term, effects of such research. Communication between research and administrative personnel, and the relative position and freedom allowed research persons within the college deserve continued study. Surely there will eventually be a place, as Dr. Blackwell has suggested, for operations research within most institutions of higher learning, and this should contribute much to the efficacy of the educational process.

It would be strange indeed -- impossible, I think -- for institutional research not to have significant long-term effects. As we learn more about the functioning and development of individuals within college settings, the nature of the educational process will be better understood, and this in time will naturally insure changes in educational practices.

Attachment A: Descriptions of the Motivation Measures

For each scale below, the typical high scorer is described in order to define the measured characteristic, and it is inferred that a low scorer could be described by terms that are logically opposite. (Although some of these scales are still in process of revision at the Center, the definitions are not likely to change significantly).

Primary Scales

Complexity (Co). The high scorer prefers to perceive and to deal with complexity, as opposed to simplicity when both alternatives are phenomenally present, and a choice is made between them. He is disposed to seek out, to tolerate and to appreciate diversity or ambiguity associated with the objects, ideas, and persons that come to his attention.

Social Maturity (SM). The high scorer is not authoritarian; he is flexible, tolerant and realistic in his relations with others, and not dependent upon authority, rules, or rituals for managing social relationships. He is impunitive, generally, but capable of expressing aggression directly when it is appropriate. In turn, this freedom, which is both emotional and social, makes it possible for him to develop serious intellectual or esthetic interests.

Estheticism (Es). The high scorer values artistic productions such as painting, sculpture, poetry, literature, drama, and music. His thought and behavior reflect his esthetic view of experience. He is interested in form and relationship, but also in the modern world of ideas.

Theoretical Orientation (TO). The high scorer is interested in applying logical and critical thought to objective data; he is therefore likely to enjoy science and mathematics. He is inclined to be skeptical, to have a strong need for independence, and to behave as though his social relationships were of minor importance.

Thinking Introversion (TI). The high scorer expresses a liking for reflective thought, particularly of a more abstract nature. His thinking is not dominated or oriented by objective conditions, overt actions, or generally accepted ideas.

Secondary Scales

Impulse Expression (IE). The high scorer has a general readiness to express, to seek gratification of, impulses, in overt action or in conscious feeling and attitude. He tends, therefore, to be ascendant in social relations, to value sensation, to enjoy fantasy and imagination, and to be determined by personal feelings and inclinations (rather than by objective conditions).

Repression and Suppression (RS). The high scorer is inhibited, prudent, rational, and cautious, and this is expressed in his attitudes toward himself and others. He therefore responds to items in a way that indicates that he does not possess characteristics such as social alienation, emotional liability, over-sensitivity, lack of self-confidence, over-dependence, aggressiveness, sexual or erotic impulsivity, nonconformity, irresponsibility, or deceptiveness. (The low scorer, on the contrary, is uninhibited, imprudent, irrational or reckless, and this is reflected by his responses to the same items, which indicate that he does possess such characteristics.)

Schizoid Functioning (SF). The high scorer expresses feelings of loneliness and of social alienation. In addition, he indicates that he has symptoms such as identity diffusion or confusion, daydreaming, disorientation, feelings of impotence, obsessional and delusional processes, and the like.

Ancillary Scales

Social Introversion (SI). The high scorer withdraws from social contacts and responsibilities. He displays little interest in people.

Masculinity (MF). The high scorer expresses attitudes which are more characteristic of college men in our culture than of college women. He is, by comparison with the low scorer, more aggressive, assertive, and socially autonomous; he prefers the definite, the controlled, and the logical. He is less sensitive to criticism, less patient and dependent, and less nurturant; and his thinking is less fanciful or esthetic.

Agnosticism or Atheism (AA). The high scorer is skeptical or rejecting of religious beliefs and practices, especially when they are traditional, orthodox, or fundamentalistic. He is also not likely to express disapproval of certain kinds of personal behavior generally considered incorrect or immoral by religious persons, that is, by the low scorers.

Liberalism (Li). The high scorer desires, and is tolerant of, change, especially social change; he has less respect for tradition, authority, and the *status quo* than the low scorer; and he is more optimistic about the consequences of change. The high scorer also expresses needs for independence, autonomy, and intellectual freedom.

Originality (Or). The high scorer appears to be verbally fluent, ascendant or aggressive in social situations, skeptical of dogma, and clever in evading authority.

Developmental Status (DS). The high scorer is more like the older than the younger college student in his general attitudes. He expresses more rebelliousness toward, and independence of, authority, especially authority which is institutionalized in the family, school, church, or state. He is less authoritarian than the low scorer, and at the same time he is freer to express his impulses.

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ON KNOWING THE COLLEGE STUDENT

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As I begin my remarks on what the college or university administrator should know about his students, I am reminded of that engaging volume on modern youth by Robert Paul Smith. I'm sure you've seen this book. Its title, you know, is a revealing dialogue between an earnest parent who asks, "Where did you go?" and the laconic reply of modern youth is, "Out." "What did you do?" persists the parent. "Nothing," is the reply. "Nothing." A popular conception of what the administrator should know about his students is limited to some such interview as this, the only difference being that it occurs in the office of the Dean of Students rather than in the home. Unfortunately, the matter is not quite this simple for the modern administrator. He must know a great deal more than "Nothing"!

This conference, attended as it is by many of the most thoughtful and capable educators of our region, is ample evidence of the complexity of the present-day task of knowing what we need to know about our students. Its pattern of participation is meaningful too. It reveals the variety of college and university agencies and organizations that are involved with the student. In such a meeting we are provided an opportunity for the exchange of ideas with individuals and groups, of whom, I'm afraid, we administrators see too little on our own campuses. Problems of finance, relationships with various publics, and the management of the extremely complex organization that most colleges and universities have become demand so much of the time and attention of the administrator that he seldom sees enough of those groups who work directly with the student. Consequently this conference offers to all an opportunity to become acquainted with fresh viewpoints and imaginative ideas.

In my own efforts to formulate a statement on what the administrator needs to know about the student, I have found it convenient to focus upon three stages of his history. What do we need to know about him before he comes to college? What do we need to know about him while he is in college? And what do we need to know about him after he leaves? Information on each of these phases of the student life cycle can be of tremendous importance to the administrator concerned with the quality and the purposes of the education his institution provides.

The problems of selection, based upon what we know of the student before he comes to college, are perhaps the most real and the most difficult of anything like final solution. To begin with, we must assume that we know our own educational purposes as an institution. Without a working philosophy and reasonably clear objectives, any information on the student is of little value. Assuming this, however, I would suggest that we need to know all we can about our raw material for the educational process. We must know the intelligence level of the student, his high school achievement, special aptitudes, attitudes or mindsets, personal stability, capacity for social adjustment, ethical values, medical history, and parental background, both the socio-economic situation of the parents and their cultural values and aspirations. All of these factors need to be accumulated and constantly correlated with achievement in college for the chief purpose of establishing more accurately than we are now able to do the kind of student who will profit most from [illegible]ticular kind of educational opportunities offered by a given college or [illegible]fferences according to sex must be kept constantly before us.

As investigator after investigator confesses, our capacity to predict achievement is discouragingly low. Tests for measuring highly important aspects of personality such as motivation, adaptability, and the will to persevere are not adequate, nor are those for such qualities of mind as creativity, insight, or the ability to perceive relationships. And while we must constantly work to improve our bases for student selection, we must also, as Karl Jaspers reminds us in The Idea of the University, "deliberately retain a sense of the infinite potentialities of human nature," so that there will "remain enough elasticity in our institutions to allow for the unpredictable."

In addition to these facts about the student himself, the administrator ought to know other factors, such as why his institution was selected by the student. What is the image of the university among the students who come to it? How many National Merit Scholarship winners come to his institution and how many go to other nearby institutions and why? What role have high school counselors, alumni, and university recruiters played in this selection?

Recent studies of the sort conducted by W. Max Wise for the American Council on Education and published under the title They Come for the Best of Reasons reveal that the typical college student of today is not at all the stereotype the public often conceives him to be. For example, an administrator without the benefit of this kind of study or a student personnel group to keep him in touch with the student may be prone to think of him as between 18 and 21 years of age, a late adolescent who regards college chiefly as a social activity. We may imagine him as immersing himself in college life, particularly its extracurricular activities, to the exclusion of outside influences of community or the world at large. His studies may be conceived as only a kind of rental price that he must pay in order to enjoy the social opportunities of the campus, with college as a period when he suspends the maturing process and postpones until the last possible moment making plans and taking action toward his entrance into "real life." His intellectual interests may be considered slight, and he is thought to be a rather dull conforming creature without any real spark of enthusiasm or originality.

But having examined available statistics on college enrollment, kinds of colleges, student age level, proportion of men and women, proportion of married students, patterns of student employment, socio-economic background, race, religion, major field of study, ability and persistence, Wise and his associates have concluded that today's college student is very different from that of the 1920's, 30's, or 40's. As Wise concluded, "available information seriously challenges this stereotype."

> Briefly they indicate that considerably fewer of today's far more numerous American undergraduates are likely to be of "college age," that increasingly they tend to be married, and that they tend more and more to earn part or all of their way through college. They tend to have more money to spend, although they also tend to come from a "working-class"family or from a lower socio-economic level, and they are more likely than ever before to be members of a minority racial or religious group. Their interest in major field of concentration has shifted toward the social sciences and business, and they are much more interested in graduate study than they used to be.

But even more significant to the administrator than this quantitative revision of our picture of today's college student is the change in his attitudes. For a variety of reasons today's student is a much more serious one than used to be the case. He is frequently interested in good grades in order to compete for financial aid in graduate school or for jobs. While Wise laments certain aspects of this interest in grades, he finds abundant evidence to reveal that the new seriousness is genuine. Since today's student looks upon college as a means to secure the kind of life he wants afterwards, a preparation for maturity rather than a postponement, he sincerely wants to know as much as he can about his subjects. His interest in his professor is not so much as a person but as an expert, and he likes to know that he is studying under a nationally recognized scholar. In increasing numbers he is likely to drop out or transfer because he does not feel that he is being challenged. He is often critical of his school or his professors for the quality of education he feels he is getting, as is evidenced in an enheartening petition of the student body of the University of Wisconsin for more in the way of intellectual challenge for themselves and academic excellence in their faculty. He shows a great deal more interest in things cultural and in the creative arts, as may be seen in the amount of money he spends on records of good music and his attendance at cultural events on the campus. While generally more interested in ideas than were his predecessors, the contemporary college student is found to be less inclined toward utopian concepts or causes and schemes for the betterment of the world at large, preferring individualistic philosophies such as Existentialism.

His interest in student groups, clubs, even fraternities, has steadily dwindled. The range of student activities and social affairs, formerly characteristic of American colleges, no longer appeals as often to the new student. He is no joiner, and he is likely to consider many student activities "collegiate" or adolescent. The same is true of campus traditions.

Consistent with this new maturity of outlook and purposiveness is the fact that the new student is less likely to be a heavy drinker than before, though more students may now drink, according to Wise. In his dating habits he has also changed. A string of girls is no longer the status symbol it once was: the new student is more likely to go steady with the purpose of establishing a valuable personal relationship with a member of the opposite sex that will point toward marriage. His dress is neater and less divergent from that of the general population.

One of the most obvious changes of great significance to the administrator is the new attitude toward independent decision and responsibility characteristic of the new student, as described by Wise. He wants to plan his own social life and he wants to be responsible for his own moral and ethical decisions. He would also like a greater share in administrative decisions that will affect the quality of his education.

I have dwelt at length on the results of one study, merely as illustrative. The findings I have summarized are probably already known to most of you. Well if these changes in the college student are even partially valid -- and I am satisfied from my own observations as a sociologist that they are -- it is time, as Wise concludes, for American colleges and universities to start "developing new ways of working with their students that take into account" these changes. The fact that these changes are taking place rapidly, often as a consequence of events and conditions beyond the campus, imposes an additional burden upon our student personnel staff and counseling organizations. It is up to them to keep the administrator in touch with the new student and his new requirements. For many administrative decisions regarding curriculum, student regulations, and student participation in university planning can be intelligently made only upon an informed knowledge of what today's student, himself, is like in college. Illustrative of the kinds of questions we might ask in this effort are these: What are the continuing influences exerted by parents? What is the student's evaluation of the counseling service afforded by separate departments and by the general counselors? Has the image that attracted him to the institution changed, and if so, in what manner? What experiences outside of the classroom have been influential in shaping his values, and how consistently is the co-curricular program that afforded these experiences related to the academic program of the school? Do the student personnel services generally undergird the academic purposes and atmosphere of the college or university? What values rank high in the student culture of this institution?

In this connection observation in places where students congregate can be revealing. What is the status of student morale? As John W. Gardner reminds us in his recent book, Excellence, "there is no excellent performance without high morale." Is it possible in a university or college to work toward a dimension of education that deals with the development of character, integrity, and service? What effects, if any, do the programs of the several religious groups have? What are the effects on students of various forms of disciplinary action taken by the college? For the student who is in academic difficulty, what is the effect of voluntary or forced withdrawal for a period of time?

Concerning the student and his classroom experience, is it time now to ask what kind of teaching and what kind of classroom situations actually stimulate study and imaginative speculation in the several subject areas? What is the student's reaction to new teaching methods such as group dynamics, audio-visual instruction, and television? How carefully are our teaching experiments designed and controlled?

In suggesting that we also need to know more about the student after he leaves college, I have several purposes in mind. You may be surprised that I add this additional dimension to this discussion. But it is my conviction that the university administrator should know more about his institution's alumni for several reasons. First, we need to know more about the alumni because in some ways it is only through knowing and understanding the students of yesterday that we can sharpen our perception of our programs for the students of today. It would seem to me, for example, that it would be useful to have a study of the relationship between vocational and professional preparation and actual careers followed by our graduates. What factors influence a high correlation -- the quality and breadth of the vocational or professional program, opportunities in the chosen field, the kind of counseling provided, the time when the vocational choice is made, the effectiveness of the college's placement program? Studies along these lines might produce data that would influence the curriculum on such questions as the nature and extent of the general education program versus specialization.

More important, perhaps more elusive, I believe, would be general studies of college graduates seeking to discover the effectiveness or lack of effectiveness of their college educational experience on their lives as adults. In the language of commerce, this would correspond to "product testing." Are the lives of our former students significantly different because they went to college? In what ways are they different? In what ways do the differences reflect or fall short of our own aspirations for changing the lives of students?

Liberal arts education ranks high in the value system of American education, but too little work has been done in the systematic observation of alumni with the purpose of determining what real effects liberal education has had on the student's tastes, his intellectual habits, his civic contributions, his ability in decision making, his capacity to make meaningful contributions to society. We all make so much of the liberal arts emphasis when we state the purposes of our institutions. The cultivation of sensitivity to truth and beauty, we say, is a central purpose of our educational programs. For example, in my opening address to the faculty of the Florida State University, I said:

> Toward this end, I offer these thoughts. First of all, I believe it is the central function of a university to make vital and meaningful those concepts which rank highest in the value systems of modern civilized society. These concepts may be variously labelled. Fundamentally it is the intellectual life that education should foster. To me the intellectual life is one that includes principally an appreciation of the beautiful, a desire for knowledge, and the will to apply this knowledge to the solution of human problems. It demands freedom of the mind and spirit. It craves justice for all. It recognizes alike moral commitment to society and individual fulfillment. It searches always for an ultimately satisfying understanding of man's relationship to God and the universe. This life, comprised of these values, represents the basis and the goal of our efforts to educate in western civilization. Such a mission is surely noble, and the part of the state university in this mission is increasingly large.

Is it possible that our research can discover whether such aspirations, to which we give lip service, really become a part of the student's perception and personality in such a way as to have a meaningful impact on his life after college?

Other information concerning alumni might also be useful to the college or university administrator. The mounting cost of higher education demands that we seek his continued financial support, and to know the factors that tend to increase his sense of loyalty and willingness to contribute is essential, whether the factors are commendable or not. There is also a possibility, I am convinced, for greatly expanding our adult education program through contact with alumni. As we come to know more fully the later interests and life tasks of our graduates, we can design these programs of continuing education more effectively and perhaps with a higher degree of integration between the undergraduate curriculum and the adult curriculum.

Thus, the administrator needs to know more about the candidate for college, the college student, and the alumnus. Let me now make some generalizations about how to get the research accomplished and the nature of the data needed, regardless of the stage of the student life cycle.

When I suggest that the administrator should know these things about his students, I do not mean to imply that it is necessarily the administrator who either gathers, correlates, or interprets this information. As "bigness" becomes increasingly a problem in the rapid growth of higher education, I think we must earnestly guard against any duplication of effort within and without the institution, for "bigness" can be expensive. It also tremendously increases the demands upon the administrator in problems that do not go beyond finance, university relations, and operations. Consequently, the administrator will have to rely heavily upon his Institutional Research Office and his Student Affairs Division, as well as such departments as higher education, psychology, and sociology or a research institute in social science.

Second, the administrator does not have time and surely should not have patience to concern himself with every study in which college students happen to figure. The college administrator and the college teacher need only data which will help them to accomplish the central educational purposes of the institutions.

Third, because of our increasing bigness, the college administrator's knowledge about the student must be knowledge that is applicable to students in general, certainly to large, identifiable groups of students. Studies about the rare or unique student should not compete with data about the larger group of students that must necessarily be the central focus as enrollments mount, for we need data which are realistic and usable right now. Studies which provide guidelines in utopian situations, where resources of personnel and money are unlimited and time not pressing, will only complicate the administrator's thinking. We shall have no utopian situations in the 1960's.

Next, I think it goes without saying that the college administrator wants data which are developed in studies which are methodologically sound. Obviously the findings must be sufficiently valid and reliable that decisions based upon them will not be premature or experimental in themselves.

Furthermore, it is my feeling that we need more inter-institutional studies. Under the auspices of the Southern Regional Education Board many of the participants in this conference have conducted research on students using samples drawn from institutions across the South; immediately I think of the work of Dr. Charles Grigg, of the Florida State University, on career plans of students. His data were collected at over 30 institutions.

Finally, my basic generalization, one which I hope runs through this whole presentation, is that administrators do need facts which will help them do their jobs more effectively. With social science concepts and research techniques now considerably sharpened as compared with a generation ago, there is no longer any excuse for the educational administrator to fly blind. Following the lead of business, industry, and the military, colleges and universities should devote a portion of their resources to operations research. It only makes good sense to do this.

Whatever other tasks may be assigned us by the states and private interests which support us, we in the colleges and universities have a basic responsibility as custodians of learning. On our campuses the traditions of scholarship and study which have come down through the centuries meet the problems and needs of a changing society. Ours is an awesome responsibility: the creative adaption of knowledge to the needs of our time. The instrumentality through which we work is the student. What you can discover about him and convey to me and other administrators, which will affect the way we teach him and prepare him for life, will influence directly our success in meeting the obligations of higher education.

RESEARCH ON COLLEGE STUDENTS:
A STUDENT PERSONNEL POINT OF VIEW

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With the clear intent of answering his own question, Norman Cousins asks in an editorial appearing in the Saturday Review of Literature:

> How much can a person tell about the present American college generation on the basis of a dozen or more visits to the various campuses in the past few months?

His retort is, "Obviously, not enough to serve as the basis for any pronouncements." He thereupon comments that the distance between interested and disinterested collegians, between the intellectually curious and the routine-inclined, between the concerned and the detached students is one which has never been greater. (Cousins, 1960)

Cousins' question suggests to me another, one with slightly different turn, "How much can a faculty member, academic administrator, or personnel worker tell about the students of his own campus as a result of 365 days (give or take a few weeks) of residence on or near that campus?" The reply again is probably, "Obviously, not enough to serve as the basis for any pronouncements."

Yet, pronouncements about college students, the college environment, the interaction of student and campus are being made by educators on something less than the results from systematic research. Following a brief preface directed to the concerns of contemporary higher education, it is my intention to speak about the need for (a) constructing premises for altering traditional programs of collegiate learning; (b) making explicit the bases for initiating student personnel programs in new collegiate institutions; (c) recognizing new directions in the exploration of student characteristics; and (d) utilizing the results of research in student personnel programs.

A Preface:
American Higher Education Today

A notable aspect of higher education in America is its rapid movement -- its alternating motion and commotion. The most obvious movement relates to the acquisition and utilization of space. Whole campuses have, like Birnam Wood, been uprooted and transplanted to more spacious areas in order to accommodate the rapidly growing student body, the expanding curricular offerings, and the mushrooming buildings. More fundamental stirrings, however, can be noted in the topics under discussion in annual meetings and conferences of college and university personnel.

A tally of the program content for four recent annual meetings of the Association for Higher Education (during the period 1958 - 1961) show these topics recurring: (1) content of programs of basic or general education; (2) possibilities for preparing, selecting, and providing inservice training for teachers; (3) review of the methods employed for better articulation of high school and college; (4) consideration of student values and of student motivations for learning; (5) principles of organizing, financing and managing colleges of a given size and type; (6) study of means for identifying and educating the talented; (7) review of best methods for improving public relations and increasing the constituent services -- extension, research, business and community consulting; (8) evaluation of developments in programmed learning or automated teaching; and (9) study of conditions of work for faculty.

Institutions of higher learning may be seen moving toward defensive or aggressive postures in such matters as the admission of students, their proper placement in programs of study, the adaptation of course content to student needs together with the utilization of new means of instruction, and the evaluation of student learning. The spotlight is -- as never before -- upon the student. But is the administrative planner preoccupied with the shadow rather than the substance of student needs? Can he distinguish between the superficial findings and the real, between cause and result?

Premises for Altering Traditional Programs of Education

Some pronouncements affecting the contemporary college student are reflected in the following snapshots:

1. A woman's college, rich in the heritage of the Old South, moves to initiate a centralized program of testing and counseling where none existed before. On what, other than a pre-empted wish to "Keep up with the Joneses in Academia" was this decision based?

2. Faculty members in a two-year, publicly-supported college, concerned about the increased non-participation of students in scheduled campus activities,

vote to relax their efforts in organizing and planning social events for students. On what, other than ennui and frustration, was this decision based? What are the facts about student participation?

3. An old-line Southern men's college, recently turned coeducational, moves to employ a psychiatrist to coordinate the institution-wide program of counseling and advising. Will this move produce a sure cure for languishing counseling in an educational setting?

4. A state college submits elaborate plans for a student union building, contending the "union enterprise" will fuse a fragmented campus, join commuters with noncommuters, both students and faculty, and provide for integration of the instructional and personnel programs. Is the student union, for this particular campus, the long awaited integrator of class and out-of-class learnings? Is this but reverie of student personnel workers, sometimes naive about budget and curricular realities?

5. A one-time teachers college in the South, now multi-purpose in its program, experiments with the use of capable junior and senior students as "counselors" for freshmen. Can well-selected, modestly-paid undergraduates provide academic advising, including study skills help, supplanting the inadequate advising being done by faculty members on that campus?

6. Results from a poll of student opinion conducted in a liberal arts college of the mid-South indicates that students want more contact with faculty members. The college has recently been accorded research funds for experimenting with programmed learning, the use of machines, tapes, and other devices. Can programmed learning free the faculty for more conferences, small group seminars,

field trips? What identity with an institution, other than through its faculty, does a student have? Under what conditions do students identify with student personnel workers?

7. In a state college of the region, the council of academic deans and directors is convinced that the 40 per cent mortality rate among freshmen is attributable to the fact that the school is getting the name of "party place," and this as a result of the social events scheduled in the freshman orientation period by the student personnel department. Is this an excessively high drop out rate in view of the admissions criteria? Is this early sociability a major or minor factor contributing to the assumed "play school" image?

8. A committee appointed to study honors programs on a state university campus recommends that students be assigned not only to honors coursework but also to honors residence halls on the basis of certain designated personality variables. On what psychological premises is this move based? Have student personnel workers contributed or reacted to the committee report? What do honors students themselves think?

9. A mid-South college votes to overhaul its academic probationary system to allow academically weak students to remain in the institution (rather than withdraw for a semester). The Academic Status Committee moves to effect a rehabilitation program for sophomore students, the results of which will be assessed twelve months thereafter. What is a recommended method for studying the students enrolled in the program which will make use of individual counseling, group conference, and lecture series?

10. A state college moves toward planning year-round instruction, going possibly to the trimester plan. A committee of five academicians has been named by its president to study the transition. Is the conversion from the old plan to a more timely trimester a matter of sole concern for academicians; of no concern for student personnel workers; of no concern for students themselves? What kind of study is needed and who shall contribute?

11. A study skills handbook, designed by the student personnel department in a four year denominational college in the South, stresses the use of the student's own room in the residence hall as the best place for study. Is this a valid assumption? Where do students study? Where do peak learnings occur in the life of the undergraduate?

12. Crisp new plans for a bright new college in the South recommend that no high rise residence halls be built -- that, instead, student residences be low- lying and sized for no more than 125 students. Who will rejoin, with what documentation, to the architect's recurring caution, "We must effect greater economy and build high"? Is there an obvious relationship, something like: "The higher the rise, the greater the size of student problems"? What is the evidence and who has it?

These are a dozen snapshots showing implementations of institutional policy. They give rise to these questions: Are educational strategists knowledgeable about the needs and characteristics of students? How powerful and knowledgeable are the constituent groups of alumni, parents, and professional organizations? Are innovations in programs of instruction and student personnel made best when the innovator is by facts possessed?

What facts? Marshalled by whom? Deriving from what study? Appearing in what form? Can investigators tag their students -- like molecules -- with radio-active isotopes, tracking them from day to day and from place to place on campus -- and finally, from page to page on their committee reports?

Premises for changing traditional programs of learning are sometimes obscured. What of initiating new collegiate programs? Within the broad, institutional goals, how has the role of the student personnel worker been determined?

Bases for Initiating Student Personnel Programs Within New Institutions

Writing of the blueprint for an ideal college (occasioned by a discussion on converting Ellis Island into a college for the future), McGeorge Bundy notes:

> Students were the focus of concern when our colonial colleges were founded, and even today it is probable that population statistics start more colleges than any other single force.

(Certainly this is true in my own state where enrollment projections place the number of students for 1960 at 158,000 strong.) Bundy (1960) adds *that students are themselves one of the great defining elements in the quality of college life as a whole*.

If the student *is* a great defining element in the quality of college life, then a study of the prospective student in these colleges in formation seems to be appropriate. On this score, I have had occasion to examine descriptive materials (Baskin, 1960) of the following programs: (1) The

Experimental College of Hofstra; (2) Monteith College of Wayne State University; (3) New College Plan, jointly sponsored by Amherst, Smith, Mount Holyoke and the University of Massachusetts; (4) Michigan State University at Oakland; (5) University of South Florida at Tampa; and (6) Florida Presbyterian College at St. Petersburg. In these institutions, how do students serve as a defining element in the quality of learning?

The Experimental College of Hofstra makes conscious provision for student personnel services, the college affirming it seeks to acquire a true image of its students. *How is this effected? How do student personnel workers contribute?* Monteith College strives to provide highly individualized instruction and names as a significant feature its "student center where students may stimulate one another intellectually." *How do student personnel workers figure in plans for individual development of students within the center?* The New College Plan proposes to develop and sustain a style of life which will insure the habit of students working together in groups and individually without constant recourse to the faculty. *What is the pervasive influence of faculty -- and student personnel workers -- in such a setting?* At Michigan State University-Oakland, the emphasis is upon the maximum intellectual development of each student. *What of other values -- morality, citizenship, personality? How is the student personnel worker caught up in such a goal or absolved from responsibility therein?* At the University of South Florida the library is the center of learning; at Florida Presbyterian College, the mid-year project is a central activity. In both, the students must adapt to new patterns of learning. *How are students chosen to fit the program?*

How, over a period of years, do the students re-structure the institution's goals? How do student personnel services develop and adjust to changing student and institutional goals? When an institution in search of an image recruits students, who are in process of constructing their own self-images, what is the result?

New Directions in the Exploration of Student Characteristics

What kind of research best defines the student who, in turn, defines the quality of college life? One will agree that it is research which goes beyond that of the two long-used variables -- scholastic ability and achievement. It is research which includes one or more nonintellective variables. It is research which includes new and improved measures of attitudes, motivation and personality traits which serve as useful predictors and criteria of college success.

As Webster and Heist contend (Heist, 1960; Heist and Webster, 1959) measures such as these can be utilized (a) in research on applicants and entering students, (b) in research leading to refinement of selective procedure, and (c) in studies for facilitating the differential education of students. The twelve action snapshots which I cited earlier, taken from selected Southern campuses, appear to be accommodated in these three categories.

What is not entirely understood by personnel workers is that evaluation of the total climate of learning, of the profile of the campus as a whole, is likely needed before . . .

the counseling program is centralized (or decentralized), the program of student activities is assisted toward a rebirth (or a burial),

the program of faculty advising is reorganized (or replaced),

the honors program is extended to include the entire college experience (or delimited to coursework only),

the master campus plan with its student union or high-low residences is supported (or scuttled).

As Pace (1961) contends, "The campus is a culture in the anthropologist's sense of that term. But it is a distinctive culture only to the extent that many of its pieces fit together in a coherent pattern, thereby creating, in fact, a dominant press." The student personnel worker must understand the character of the students in the institution in order to visualize what results may be achieved and in what degree.

As Pepinsky (1959) noted in the 58th Yearbook of the National Society for the Study of Education, a primary need in student personnel research today is one central to student personnel work as a profession -- a need for knowledgeable persons in the field to ask intelligent questions about their everyday practices. On this score, I believe that the evaluations undertaken for purposes of accreditation in Southern Association of Colleges and Universities must be reviewed in light of new methods for identifying the characteristics of students and in describing the climate of learning on campuses. A program of student personnel work on a given campus presumably meets the needs of particular students. Only when the climate of a given campus has been particularized will the discrete pieces of information covered in the Manual become an educational mosaic -- i.e., something more than a loose inventory or routine census taking.

An accrediting committee is handicapped in adjudging how effectively a student government plan is operating on a campus, how well the program of orientation is succeeding, how much or how little student organizations and activities contribute to the individual development of students and the long-range goals of the institution (see Southern Association of Colleges and Secondary Schools, 1960) -- _if_ the total learning environment, within which these are operative, remains unassessed or only superficially described.

Utilization of the Results of Research In Student Personnel Programs

Viewing the current scene, one commentator (Watson, 1961) notes: "There has never been a time when more information was more available to more people than at the beginning of this promising decade." An eminent historian (Toynbee, 1961) rejoins, "When we multiply our store of social information by our store of psychological information, the product is virtual infinity." So it is, the personnel worker in higher education finds himself at the shore's edge of a Live Sea of facts and forecasts. Through these he must propel himself -- or drown in an ocean of information, engulfed by his own ignorance. Personnel workers, with little time to meditate and with much pressure upon them for quantity production, seek a Moses to chart the course.

Stimulating as the reports of Jacob, Eddy, Sanford, Goldsen, Pace and Stern, McConnell and staff are, their greatest good among student personnel practitioners is yet to be obtained. The distance between the informed and uninformed student personnel worker, between the intellectually curious and the routine-inclined practitioner, between the concerned and the detached counselor, dean, or activities director has never been greater! Often isolationists, by choice or chance, student personnel workers must be helped to perceive their place in the mainstream of ongoing research. Allowance must be made in the working day and in their professional assignment for their study of and contribution to ongoing departmental, institutional, or regional-national studies, (Hardee, 1959). Weitz' (1957) study of a few years ago affirms that facilities for research in student personnel area are virtually nonexistent. It must be patently understood, however, that before one launches into individual or team research, he must have knowledge of where others have gone before.

To date, the greatest utility of the studies by Jacob, Eddy, Sanford, Pace and Stern, McConnell, and others has been made by college professors and their graduate students. Those student personnel practitioners who are _not_ pursuing graduate degrees, who are _not_ motivated to read widely and are _not_ discussing emerging research in their professional meetings (AHE, ACPA, NADWC, NASPA, and SCPA) are out of the swim. Needed is an educational entrepreneur, a middle man who is aide and interpreter to marooned student personnel workers, and who possesses these characteristics:

1. The perception of an Indian scout,
2. The perspicacity of a water witcher,
3. The persuasiveness of a patent medicine man,
4. The purposefulness of a marriage broker.

This is an educator, knowledgeable about higher education, institutional research, and student personnel work who, upon invitation to visit a campus,

(a) demonstrates an ability to size up the geographical and psychological terrain, to see student personnel work in relation to the whole of higher education; (b) who can divine the trouble spots with an acute water witching sense, deciding what research deserves to be cited and applied, (c) who can persuade administrators that a specific research "medicine" (something more than a placebo) will effect the cure, restoring the system to health; and (d) who, operating with good taste and diplomacy, can convince student personnel workers that there are lasting benefits deriving from the marriage of a research _attitude_ and student personnel _dispatch_.

This entrepreneur is not now present in the kind and quantity needed. More often, the consultant who is knowledgeable about student personnel work lacks an understanding of higher education generally and institutional research specifically. The specialist in higher education is frequently "short" on student personnel knowledge both theoretical and practical. The specialist in institutional research does not always possess a sharp, incisive knowledge of the scope of student personnel services. This triple-expert with competences in higher education, institutional research, and student personnel work is one of a species and strain yet to be developed.

Having used the figures of Live Sea and ocean of information in picturing the plight of the student personnel worker, I shall denote this educational entrepreneur as a kind of "aquanaut." He should be able to go down deep enough to probe research results adequately, but not so deep as to become entangled with minutaie which prevent him from sighting the broad expanse of surface above. He must appreciate the intricacies and wonders of research design without becoming mesmerized by statistical "sirens," thus forgetting the purpose of educational research; i.e., the enrichment and improvement of ongoing programs, the assisting of practitioners in effecting better planning, management, and evaluation.

Summary and Conclusions

As indicated, the intent of this paper has been to cite the following four needs: (a) that of constructing premises for altering traditional programs of collegiate learning; (b) that of making explicit the bases for initiating student personnel programs in new collegiate institutions; (c) that of recognizing new directions in the exploration of student characteristics; and (d) that of utilizing the results of research in student personnel programs.

Brumbaugh (1960) comments that quality is the key word in higher education today, that the maintenance and improvement of quality under changing conditions and new stresses is a major issue confronting colleges and universities. Gardner (1961) addresses himself to excellence commenting that we must reach for a conception of perpetual self-discovery in order to realize our best self.

In the face of strong pronouncements such as these, student personnel work can do little better than pursue its goals of excellence and insure its quality through self-study, self-discovery, and consequent self-improvement.

RESEARCH ON COLLEGE STUDENTS:
A SOCIAL SCIENCE POINT OF VIEW

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Total personal growth of students in the course of college and professional education is, and always has been, of central concern to educators (see Jacob, 1957; Eddy, 1951; and Wise, 1958). As one of them has said:

> We must of necessity consider the student's total make-up at the time he first makes contact with the college. His lack of growth mentally and physically becomes our problem, which we "inherit" from his previous school and parental environment. It is left to the college to mold the student's physical and mental growth, through education and through experience, into the man we expect him to be. If we fail to do this, may we inquire, have we failed in our objective? (ECPD, 1957)

A question of this sort makes evident that education designed to further student development in college must go hand in hand with long-range planning and research designed to uncover the nature of the developmental process itself, and the social and cultural matrix in which it occurs. Towards this end, a number of research programs are in the planning and execution stages in colleges and professional schools throughout the country. Analysis of this ongoing effort, much of which has not been reported thus far in professional journals, may yield generalizations of some value to educators who seek profitable areas of research on students in their own institutions.

Current Research Areas

We may think of the programs now underway as falling into four main types. In the first an attempt is made to assess the impact of a specific educational experience on a broad aspect of the personal or professional growth of students involved. One example is the evaluation research of the Comprehensive Care and Teaching Program at the Cornell Medical School, which provides for continuous care of the same patient by the same student physician, in an effort to focus his clinical attention on the patient in his environment, rather than on a disease entity. The evaluation research (Merton, 1957) is being carried on by sociologists from the Bureau of Applied Social Research at Columbia. They have paid attention thus far to the development among students of a professional self-image; of preferences for types of patients; and on training for uncertainty, in the course of comprehensive care education. Research in progress aims at relating the social status of medical students, and the friendship-alienation patterns among them, to the process of acquiring professional attitudes.

Another example is the research evaluation of the University of Michigan Honors Program for undergraduates, open to about eight per cent of entering freshmen, to provide special opportunities for independent study and individual course planning. Research underway aims at discovering the extent to which a distinctive culture and set of values concerning academic activity develops among honor students; the relation between participation in the honors program to participation in other campus activities; and patterns of personality change, or of adjustment problems peculiar to honor students.*

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*For further information write to Robert Angell, Director of the Honors Program.

A second type of study tries to assess the impact of a broad aspect of the educational environment on some more specific aspect of student activity or personal growth. At the University of Kansas, for example, an investigation is underway to clarify the relations between student cultures and the level and direction of academic effort put forth by students. According to the investigators,

> Our first year's field work is designed to pave the way for a thorough study of student groups and cultures. The immediate objective is to ascertain the range of perspectives on academic work held by students and the kinds of groups which maintain cultures influencing student's academic perspectives. . . (Becker, n.d.)

At the Georgia Institute of Technology, the writer has been studying changes in identification and conception of the engineer role that occur among students from their freshman to senior years in four different departments of instruction: Chemical Engineering, Mechanical Engineering, Industrial Engineering, and Industrial Management. Engineering educators have devoted much attention to distinguishing the engineer role from that of the technician; they have paid relatively scant attention to clarifying the role relationships that exist between engineers and managers (Medalia, 1958). It is the writer's hypothesis that one important source of dissatisfaction which many engineers have expressed in employment situations (Drucker, 1952; Moore and Renck, 1955) stems from their lack of any clear identification with one or another of these roles. The writer is attempting to study, therefore, the relationship between major work in the four departments, and (1) strength of the student's personal commitment to the engineer role; (2) student's functional conception of the engineer role, in terms of its perceived relation to the functions of scientist, manager and worker; (3) professionalization of the engineer role as perceived by students in terms of its status relative to other occupations; its perceived independence from control by management and labor; and the motives which students assign for task performance as engineers.

A third type of study attempts to understand broad aspects of student personality development and motivation in relation to the environment of a single institution viewed as a complex social system. At M. I. T.,for example, the Undergraduate Association has sponsored a study with the hope, in the words of the Association's President, that,

> It may serve as a first step towards a better understanding of the development which each of us experiences during our four years at M. I. T. We are interested in the expectations and goals with which the entering freshman approaches M. I. T.; the continuous changes in these attitudes which occur throughout his M. I. T. career; and, in addition, we wish to find an indication of the factors in the M. I. T. environment which are responsible for these alterations. (Sussman and Levine, 1958)

At Harvard, a team of psychologists and sociologists is preparing to follow the Class of 1964 through its college career. The study "rests on the basic premise that personal growth, i.e., the learning of new ranges of values and behaviors, arises out of the interaction of two major sets of variables: (1) the attitudes, values, psychogenic needs of the student, (2) the varying constellations of roles and the corresponding systems of value and belief found within the college walls."* Similar longitudinal studies of the interdependence of personal growth with institutional environment are planned or are actually underway at Vassar, Tuskegee, Yale, Wesleyan, Stanford and Sarah Lawrence (Sanford, 1956).

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*From research prospectus by Stanley H. King, University Health Services, Harvard University.

A fourth type of research involves the systematic attempt to compare student development processes and patterns in a selected range of institutions. The largest scale example is the five year program started in the fall of 1958 at Antioch, Reed, San Francisco State, and Swarthmore, by T. R. McConnell, Director of the Center for the Study of Higher Education, University of California at Berkeley. Three of these colleges were identified in the Jacob Report as having "peculiar potency" or impact on student values and development generally; and the study hopes to analyze the process through which this "impact" occurs, in contradistinction to the processes which result in a relatively small impact of college environment on student growth in the control institution.

Evaluation

What conclusions can we draw from this brief review of ongoing research in the field of student development? Concerning the research process itself, we see first that it is almost always carried on as an interdisciplinary project involving teams with varying proportions of sociologists and psychologists; furthermore, it is set up on a long-range basis -- usually three to five years, to allow for the use of a longitudinal follow-up, rather than a cross-sectional comparison (e.g., freshmen with seniors) as the basis for the analysis of development.

Secondly, the programs tend to be carried out as institutional research projects, although there is no set pattern in this regard. The study at Amherst for example, "was conceived by a committee appointed by the president of the college to explore the whole area of undergraduate motivation." Similar committees are engaged in student development research at Yale, Harvard, Wesleyan, and the University of Michigan. On the other hand the studies at Vassar, M. I. T., and in the medical schools of Cornell and the University of Kansas, are the work of outside consultants.

Turning from procedural to substantive considerations, it is only natural for educators who view this ferment of activity to ask: "What does it all prove that is of any practical value? What can research tell us about student development in our institutions that we don't know already? How can anyone hope to study scientifically, intangibles such as 'personality' or 'student culture'?"

Confronted by the last question, the sociologist or psychologist may draw what comfort he can from the story of Charles I and his courtiers laughing incredulously at reports that Dr. Robert Boyle proposed to "weigh the air." To the first two questions, however, he might say: Research to date has served very much the same function as did studies on phlogiston in the 18th Century -- it has shown us where not to look for fruitful results. Particularly it has shown the need to move from cause-effect studies of single variables to the consideration of a complex of factors in some presumed systematic relationship. Studies of the effect of particular kinds of courses, or methods of instruction, on students' values and academic achievements have generally revealed, as Jacob says, few changes of significance (Jacob, 1957). This is not surprising in view of the limited part which the stimulus event (special course or method of instruction) plays in the total context of the student's life. On the other hand, the presumed dependent variables (types of attitude -- political, religious, economic; or achievement, measured by standard tests) are by themselves only narrow and segmental aspects of the individual total activity pattern. This is why emphasis in student development research has shifted to consideration of broader variables, like those of student culture, peer group relationships, or formal ideology, as significant aspects of the college environment; and to consideration of the student in terms of personality, value patterns, self images, and role conceptions.

All of the studies reported here share this new orientation, and it is perhaps premature to call upon them for definitive results. (Nevertheless, experience to date indicates certain unanticipated consequences of student development research, at the same time that it has failed to disclose consequences which some have expected would occur.) There are persons, for example, who feel that research on student development in college necessarily leads to a de-emphasis on academic values, in favor of "progressive education" goals: "social adjustment," or "self-expression" at whatever level of academic achievement the individual chooses to set for himself. In fact, the student development research reported here does not presume that the college is to become a clinic or cabana, but rather that the end of academic achievement itself can best be brought about by viewing the student as a whole person functioning in a complex social setting, instead of largely as an intellect in pursuit of a curriculum.

On the other hand, an unanticipated consequence of research in this area may be the development of teachers, as well as of students. Some 25 years ago research on physical factors in worker productivity at the Western Electric Hawthorne Plant was found to be of itself a most significant variable in relation to that productivity (Roethlisberger and Dickson, 1939). The research thus served to give management insight respecting the human factor in output, and the significance of informal group relations for the administration and coordination of plant activity. In the same way, many participants in the studies reported here believe that the conduct of their research is of itself an important educational experience for students and faculty alike: in terms of the questions it raises, as well as the answers it suggests concerning the relation of educational goals to processes of personal development within the social system of the college.

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MEASUREMENT AND EDUCATIONAL POLICY

Dean K. Whitla
Harvard University

May I say that I'm delighted to have been invited to this attractive area of North Carolina to this lovely college, to discuss "Measurement and Educational Policy" -- a topic in which I'm highly interested. It is always a privilege to present some of my ideas to an interested group, and this is especially true since I believe that these concepts do have much to offer to the arduous task of "deaning" -- a position where you do change, and always feel you should do more to change, the climate of your college so that it becomes increasingly effective as an institution of learning. That this area of administrative research is receiving attention at this conference is a demonstration of interest which such research has long merited but seldom received.

Before giving examples of my own work which might be of use to you in your own colleges, let me develop some general principles which I believe are helpful in establishing a frame of reference for administrative research. The first I will call "feedback."[1] My choice of word comes from my own training in the physical sciences, rather than from some distorted attempt to use physical science nomenclature to associate this work more closely with the authority and exactness of these sciences. Feedback is simply the process of feeding back some of the output of a system to the input so that the output can operate as a correcting influence. Much of the fundamental experimental work in behavioral psychology is based on this idea of feedback. Any system based on rewards or punishments is using an output (an action) to determine the input (reward or punishment) to the animal.

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[1] Some of the material which follows was taken from a speech given by the author at Clark University, and reprinted in the July 1960 issue of the Educational Record. The conference at Clark was sponsored by the American Council on Education.

As another example, if a person is enclosed in a box so that he loses all contacts, so that he cannot see, hear, feel or smell, he begins to exhibit neurotic symptoms. In other words, feedback is necessary to provide a frame of reference for reality. Essentially the same phenomenon is present in social situations. We learn from others how they will react to our speech, our dress, our way of thinking. In fact, this perception of others to the degree of sophistication which George Herbert Mead called the "generalized other" permits us to select among alternative courses of action, to develop social confidence by being able to anticipate the reaction of others to us. What a college administrator needs is a feedback system -- a method of assessing, for example, how well his graduates are doing, how various college regulations are affecting the students. Why do we so seldom find such a formal system in operation in colleges? First, we know that informal feedback, such as talking with graduates in the process of enforcing regulations, is both inexpensive and highly sensitive. In comparison to the sensitivity of a professor or dean who has interest in their students, many of our measurement techniques are clumsy indeed. The shortcomings of the personal feedback system are that generally information comes from those whose paths cross in the normal course of events -- which can be a highly biased sample, and the accuracy of comparison and synthesis depends upon the memory of the person evaluating. Also, because it is personal, it can contain personal biases in spite of all the good intentions of the evaluator. Of course, the objective system of measurement, because of its objectivity does not contain a value system; it therefore cannot be the basis upon which to run a college but can only serve those who do run the colleges.

The second principle which I believe is significant in evaluating research resulting from measurement and testing is that such findings are necessary but not sufficient for the evaluation process. Neither our tests nor our techniques are yet adequate for assessing the complete man, or the effect of education. We want our students to score well on standardized examinations but this is not sufficient; we want our graduates to do well in their chosen vocations but this is not sufficient.

In summary, I have been proposing that we keep two principles in mind: (1) feedback is necessary for education, and formalized feedback should supplement informal feedback to provide sounder bases for evaluation; (2) data from measurement and testing constitute necessary but not sufficient criteria for educational evaluation.

Let me tell you of some of the kinds of research carried out in the Office of Tests at Harvard College in which we have tried to implement the principles just discussed.

For a few years the scores on the German tests given at the end of the first year of college language study had been progressing steadily upward and were considerably higher than they had been at the time the tests were standardized. Both the Office of Tests and the German Department were concerned about the cause of these higher scores: were these increases primarily a function of increased knowledge of the language, or were they the the result of undesirable influences?

In a preliminary examination of the tests, their security, methods of administration, and original standardization all seemed satisfactory. Therefore, our study of the problem focused on differences in the abilities of students enrolled in the courses from year to year.

In our elementary German A course, the median test scores of three classes studied had increased on a College Board scale 25 points in five years. And with this increase there had also been corresponding improvement in median Predicted Rank List.[2] Converting the change in Predicted Rank List into achievement score equivalents, we found that the ability of the students had increased considerably more than had their German scores. The German score increase was 25 points; the PRL equivalent was 122 points. A corresponding increase in student ability was found also in higher-level German courses.

Since scholastic ability, and specifically verbal ability, as we had measured them at admission, had increased during these years at a much faster rate than had the scores in the German achievement test, we felt the increase in the latter could well have been a reflection of greater knowledge on the part of the students. Certainly the magnitude of the change in the aptitude scores overshadowed by comparison the change in the German scores. I might summarize by saying that the concern over the increasing mean German achievement scores shifted from one about too much change to one about too little.

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[2] Students' grade predictions based on their CEEB scores and secondary school records.

To see an example of collecting information that can be useful in evaluating departmental policy, we will look now at a course requirements study.

To ensure that all students acquire breadth as well as depth in their education, they are required to take a series of courses under the Harvard plan of general education; these requirements plus those of the department still allow a degree of freedom in the choice of the rest of the program. To examine the pattern of courses actually followed by concentrators in the departments, we compiled the number of courses taken in each department in the area and in the general education program. In addition, we separated students in the larger departments into upper-level and lower-level groups on the basis of junior grades.

The results indicated that: (1) concentrators who take more courses outside their departments and area are those in the natural sciences -- the humanities concentrators, using course distribution as the basis of evaluation, have the least-rounded program; (2) students who tend to take more courses within their departments are the more able, rather than the less able, students. These conclusions tend to refute the common statement that our natural sciences concentrators obtain a narrow education and, further, that it is our able students who, secure in their abilities, sample widely among the college offerings. Such findings can be helpful in considering the effect of legislation concerning course distributions in the different areas and provide a factual background for considering changes in such legislation.

Approximately one-fifth of the Harvard student body goes on to medical school, and for this reason the problem of admission to medical school is of vital interest to many of our men.

We studied, as a sample, 1390 Harvard College students who applied for admission to medical school from 1949 to 1956. We examined the college records of these men by studying their concentration, grade averages, and number of degrees with honors. Then, since success in the Medical College Admission Test is part of medical school admission requirements, we tried to estimate its importance in the admissions process by tabulating the number of students admitted and rejected on the basis of scores on the four sections (Verbal, Quantitative, Modern Society, and Science).

I will now summarize a few of the most interesting findings of this study. I think the findings show how this kind of information can help confirm the conviction held by administrators and faculty of liberal arts schools that the man with the broad liberal arts background can more than hold his own at a professional level.

1. A student's chances of admission were not at all related to his undergraduate area of concentration.

2. The Medical College Admission Test scores seemed to have little importance in the admission of students who had received degrees with honors. The test scores were used primarily for selection of non-honors graduates, and then only at certain medical schools.

3. In general, premedical concentrators (those in chemistry, biology, and biochemistry) made the best first-year medical school grades. By the third year of medical school, however, concentrators in other areas had improved their rankings, but premeds still ranked highest.

4. By the third year, those concentrators in the social sciences who were attending Harvard Medical School ranked slightly higher than their premedical classmates.

5. In general, students who had graduated with honors received grades higher than the average for their medical school. The non-honors men received grades approximately the same as those of the average students in their medical school.

When we interpret these findings for the undergraduate who expresses an interest in medicine, we can tell him that he should concentrate in the area that holds the greatest interest for him. We feel confidence in telling him that it will be his record, not his concentration, that the medical school admission committees will evaluate.

To provide a body of descriptive material about student experiences in the Harvard environment so that some patterns of development could be traced, and general evaluations through more formal measurement techniques could be made possible, we undertook a study of the "average" student at Harvard College.[3]

At the present time, measurement can provide no really adequate tools for investigating this area. Our attitude and value scales are extremely limited in telling us precisely what system of values an individual holds, and certainly do not get at the reasons for his holding his particular position. However, it is precisely this last point that is central in any examination of the results of liberal education.

> You're always going to forget what they say to you in terms of actual content where they are discussing the Puritans or Nathaniel Hawthorne, or Professor. . . discussing Freud -- but you can never forget his love and his devotion for (it), this you will never forget. At times you can recall some of the intensity with which he discussed the subject. Then you will sort of be bound to do this on your own. You know, try to respond to his memory in a way.

This statement, which would quicken the heart of any teacher, was typical of the statements made by a young doctor during his interview as part of a descriptive study of the college experiences of Harvard graduates. We felt that such a study could add to the understanding of student experiences during their undergraduate years, and the effect of such experiences -- ranging, at Harvard, from the large lecture course to the tutorial, from House athletics to Crimson reporting -- on their development.

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[3] Some of the material which follows has been extracted from an article by this writer, "Encounters with Learning," Harvard Educational Review, 30, Fall, 1960.

The subjects of our study were men who, during their college years, were academically average. While a study of the average student at Harvard would not allow us to make generalizations about students at all colleges, it seems that it would have some value as a case study in which other colleges may find useful descriptions of student learning experiences. Further, the status of academic averageness must exist whenever colleges use a system of evaluation. Only by studying the academically average student can we understand his problems and the special effect of his "average" position upon them.

At a liberal arts college, institutional programs are intended to allow to develop men with a philosophy "rooted in conviction, stretched by a world view, and animated by mature social concern" (Pusey, 1952). To relate such high aims to the reality of the college product -- the graduate -- we needed an operational base from which to evaluate the liberally educated man. To create such a base, we simply asked House Masters[4] or Senior Tutors -- in other words, men intimately acquainted with the Harvard environment -- to rate those men who had lived in their Houses on the degree to which they possessed the qualities of mind and sensibility which mark the liberally educated man.

Our purpose in obtaining the ratings was to see if men with high ratings differed from those with low ratings in terms of faculty contact, courses, majors, extra-curricular activities, etc. If a man achieved a high rating, what qualities did he possess which might be revealed in our interview which the lower-rated man did not possess; and how did Harvard College contribute or fail to contribute to this preferred development?

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[4] Heads of Harvard's residential units, housing 300 - 400 students. The Master's position has been compared to that of a president of a small college, and the Senior Tutor's position to that of a Dean.

The ratings ranged from 1 (very outstanding) to 4 (below average). Our own evaluation of these men, on the basis of the interviews, formed the second set of ratings. These two sets of ratings, based only on the 44 (of the sample of 50) graduates of the Class of 1952 for whom we had obtained ratings, correlated .71. A correlation of this size provides evidence that we have some agreement on the meaning of liberal education as exemplified by graduates of the college.

We used the semi-structured interview which we found to be an efficient as well as an effective method of gaining pertinent information about experiences at the college. The interviews were taped and transcribed; from this abundance of material (over half a million words) a content analysis of the dominant themes was made; and, these findings were illustrated by selected quotations.

Talking with these graduates, reading and re-reading the transcriptions of the interviews, we began to get a sense of what kind of men they were and what had been the effects of their years at Harvard.

Distinct differences began to emerge in patterns of development of the high-rated men and development of the lower-rated men. We could see clearly the detrimental effect of "academic averageness" on those in the latter group in their reluctance and almost fear of approaching faculty and house staffs in a status that they felt was second rate. We could see that the average student, by not being at either extreme of academic performance, could exist without drawing the attention of professors and staff, and therefore, if any initial apathy or aimlessness existed, he could easily avoid deep personal involvement in his work. This in turn can result in feelings that college life and postcollege activities do not lead naturally one from the other, and college becomes an isolated experience.

On the other hand, when our academically average men overcame the psychological barriers of their averageness and made contact, social (in the house) or tutorial, with faculty members, came to know the faculty as men on the human level, and were guided into independent study, they obviously benefited much more from their education, conveyed more of the feeling that they had carried the tolerance and integrity of our system of values into their personal lives, and in turn were those men who generally received the higher ratings. However, the average man's contact with the faculty seemed too much the result of accident. One might wish for a kind of invisible net that might be spread around all our students to draw them into the fellowship of scholars.

When we studied the interviews, we found a natural division into three general categories of men. The arbitrary classifications which follow, however, are simplifications of a dynamic problem, but serve best the purpose of illustration. We left unclassified a number of men who did not reveal themselves as having the predominating qualities of any one of the three groupings.

The higher the ratings, the more tolerance seemed to exist for points of view other than one's own; less dogmatism, more willingness to hear out all sides of a question. With rare exceptions, these men recognized that there are reasonable points of view in conflict with their own. But where the effect of education seemed critical was in personal flexibility in integrating the formal attitudes of the college with the actual practice of the individual.

We classified as "synthesizers" those men who were judged to have acquired the attributes of liberally educated men and seemed not only to have acknowledged the complex nature of every man's decisions, but to have arrived at a state of balance where personal prejudice does not overcome a reasonable and concerned regard for situations. This held up even in the areas where men are most apt to give way to personal predilections. In other words, they allowed their learning to influence their lives.

> The kinds of attitudes developed at Harvard were: first, development of self-consciousness and realization that one may do with one's self what one will. Second, and particularly with respect to the college, that both breadth and depth of intellectual development ought to be tried by an intelligent individual. Third, that no one should ever be above criticism. . . Realizations about specific areas like those you mention usually came to me as rather sudden little epiphanies when I realized that I could be honest with myself and admit that my views had been changing.

Those who were rated more "average" and whom we classified as "dichotomizers" seemed aware of the complex nature of human equilibrium, but through their statements revealed that when it came down to feelings as a basis for their actions, they at worst reverted to the kinds of attitudes the Harvard community tried to overcome, and at best found it difficult to relate the college environment to college or postcollege activity. Some of these men respected Harvard for its integrity and acceptance of all men on their merits as individuals, but in their personal lives held more to a code of making their way in the world by more expedient methods.

> I think I became a little bit more broad-minded in (attitude). I used to have pretty definite opinions about these things but now it more or less tends to be less sectarian.

> I think it's (in the Navy) that you learn that it's not necessarily what you know or what you can do that gets you ahead, so to speak. It's a bunch of other things including seniority and how you happen to manipulate your particular cards and who you are nice to and you learn there the benefits of going in the back way, so to speak. And in this respect, you become less idealistic.

Some few men with "average" to "below average" ratings, seemed essentially untouched by the kinds of values indigenous to the college, and these we classified as "antithesizers." It cannot be possible that four years at Harvard, attending classes and talking with students, could result in complete intellectual ignorance of Harvard's general value system. But it does seem possible that four years can be passed here with no evocation of any vital personal response. Where these men spoke of the value of education, it was in terms of prestige and the ability to get ahead in the world. The tendency to see things either black or white was most common in this group.

> My education period had no effect on my personality or goals or orientation. I really regret it. . . but doubt it's the fault of the process. . . you can't expect miracles out of a school.

> I've grown up with a marked antipathy toward social barriers although I'm not ready to break them down, because I figure equality doesn't suit me in the least. . . I believe very strongly in the social groupings as they are. . . and I say this at a point before I am rich enough to be on the giving end of the discrimination.

In the development of liberally educated men, a pattern can be traced in the nature of the experiences with professors and tutors. All of the men who singled out one or two professors within their departments for special contributions to their academic development, and who had experiences followed and reinforced by a good tutorial, received high ratings.

If we say that the ratings were a measure of a student's response to the Harvard environment, then we can say that we also know that this pattern of successful departmental-tutorial experience is not the only way our average student can develop those qualities which are highly rated. However, when we consider that three of our four highest rated men went through this pattern, it would seem to be an especially successful way of allowing the academically average student to develop his potential.

We found that many men described enthusiastically the influence of professors in their departments; but they then went on to say that their tutorial was a disappointment or that they had not participated in a tutorial program. These were the men who frequently expressed dissatisfaction with their development at Harvard. The combination of stimulating course work with satisfying independent research guided by an interested tutor, allowed the fullest development of the individual. On the other hand, tutorial alone does not solve the problem. If a man has remained on the periphery of involvement, senior year tutorial is too little, too late.

If we try to pinpoint a quality which is essentially academic, we find that the man who did not become deeply involved in the work in his own department did not express the same satisfaction with his education as the man who responded to the challenge of his area and went on to independent work.

Many of these men could have made far more effort academically throughout their college years, and the lack of direction, recognition, and personal challenge from the faculty seem in large part responsible for their marginal participation.

What I have tried to do in these few minutes is to illustrate some of the kinds of studies that have provided useful information in attempts to resolve problems at Harvard College.

I trust that by telescoping many studies into this short a period I have not provided too complicated a maze for you to follow. Hopefully, I have discussed problems of interest to you and given some findings which might also be appropriate for your institutions.

This is a new area of research, one which I believe has the possibilities of making great contributions to more effective functioning of institutions of higher education.

PART 2

RESEARCH REPORTS AND REVIEWS

Presented by

J. A. Davis
Educational Testing Service

Otis D. Froe, Director
Research and Evaluation
Morgan State College

Charles M. Grigg, Director
Institute for Social Research
Florida State University

Robert E. Iffert, Chief
Faculty and Student Services
United States Office of Education

Frederick B. Rowe
Assistant Professor of Psychology
Randolph-Macon Woman's College

Cliff W. Wing, Jr.
Director of Admissions
Tulane University

RESEARCH SPONSORED OR CONDUCTED BY CENTERS OR AGENCIES FOR THE STUDY OF HIGHER EDUCATION

Robert E. Iffert
United States Office of Education

Anyone coming from Washington, D. C., is expected to be adept at handling alphabetic designations. I want to demonstrate my qualifications at the start by mentioning the Inter-Association Committee of AACRAO, ACPA, NASPA, and NAWDC. This committee has a sub-committee entitled "The Inter-Association Committee on Relations with Centers for the Study of Higher Education." This sub-committee has recently completed a survey of research in progress or currently reported pertaining to college students and potential college students by the study centers.

It has been indicated that you might have some interest in the findings of the survey by this sub-committee and Don Robinson, whose title is Specialist for Student Services in the Division of Higher Education in the U. S. Office of Education, has asked me to substitute for him in making this report. His responsibility ends with the collection of the reports from 13 agencies. I have assumed the risk-ridden task of selecting and commenting on a few of the studies. Obviously, not all of the research that has been and is being sponsored or conducted can be considered in the allotted time. You will understand that my omission of studies involving Southern colleges and universities is in the interest of not encroaching on Kenneth Wilson's topic. It would be difficult to specify any other criteria for selection. Possibly my more than passing interest in college student mortality and survival may have led me to stress studies in this area.

In general, the survey of the sub-committee shows that the primary emphasis of studies sponsored by the 13 agencies is on student characteristics. The second area of emphasis is on studies of factors which affect college attendance, retention and withdrawal. Third in general emphasis, as measured by the number of studies, is in the area of characteristics of student personnel programs. The majority are directly or indirectly related to counseling or counseling-related services. The reports of the agencies listed a total of 22 additional studies distributed among the categories of educational achievement of students, institutional characteristics, mental health, and prediction of academic achievement. Studies of the inter-relationship of institutional factors and student development and studies involving prediction of success in college based on non-intellectual characteristics of students rather than on the basis of achievement and aptitude tests alone, seem to be receiving increased attention.

From the standpoint of the responsibilities borne by most of us here, it is probably more important to understand the factors that influence high school graduates to continue and succeed in college than to know of the factors that influence high school graduates to enter college. There are many high schools today from which as many as 80 per cent of the graduates enroll in college, yet fewer than 50 per cent of those who enter manage to graduate from the institution in which they first enrolled.

If we can assume that the foregoing has met the minimum requirements of an orientation program, let us examine briefly a few of the studies that are in progress or have recently been completed.

There is in progress at the Center for the Study of Higher Education at the University of California at Berkeley, with financial assistance from the Office of Education, a study which attempts to find answers to such questions as:

1. To what extent is America utilizing the talents of its high school graduates?
2. What are the factors related to the number of young people who enter college in terms of (a) socio-economic status; (b) educational background of family; (c) educational plans of peers; (d) mental ability; (e) educational and vocational motivation; (f) personality characteristics (g) perception of the importance of college and the image of different types of colleges, and (h) knowledge of the occupational world and the educational requirements of various occupations?
3. How is the presence of different types of local public colleges related to the number of high school graduates of different socio-economic and ability levels who enter college and who make satisfactory academic progress?

Thirty-seven high schools in 16 selected communities are cooperating in the study. No results have been released for publication but preliminary tabulations suggest a few interesting points. For example, in the fall of 1959 the national first-time degree credit enrollment figures showed that 10 per cent more men than women were registered whereas among the 9,500 high school graduates in the McConnell-Medsker study only 5 per cent more men than women entered some type of post-high school institution. As nursing education becomes more and more a collegiate responsibility, we may find that the college male will get a little better break in the matchmaking arena of the college campus, at least in terms of number of choices.

The study further shows that of 1,000 high school graduates in the spring of 1959, 467 continued their education or training in the fall; 322 were employed full-time; 66 were in the military service; 55 were unemployed; 32 were engaged full-time in homemaking and 58 were unclassified.

Some significance may be attached to the fact that 26.2 per cent of the high school graduates in the sample who continued their education enrolled in public junior colleges. The national figures showed only 18.5 per cent so this fact must be kept in mind when certain of the findings of the California study are interpreted.

Of particular interest to me is the figure of 77.3 which represents the per cent of the top fifth of the high school graduating classes who continued their education. Back in 1957 I was roundly criticized for my estimate, based on our retention and withdrawal study, that as many as 68.6 per cent of the top fifth of high school graduating classes were continuing their education on a full-time basis. This rate was higher than that reported in other studies and there were some who seemed to be fearful that the estimate would reduce the justification for student aid programs and proposals. There is enough to worry and urge action about in the fact that one fourth of the high school graduates in the upper 20 per cent in ability do not continue their education.

Those of you who have had some part in the preparation of high school guidance personnel will be interested in that part of the California study which shows the destinations of high school graduates by mental ability quintiles. If these destinations are on the advice of the counselors it would appear that they believe the grass is greener for the more able students in out-of-town colleges. Fifty-one per cent of the top fifth on mental ability test scores go to out-of-town colleges as compared with 41 per cent to local colleges. At the other end of the mental ability test score scale, the bottom fifth, 24 per cent go to out-of-town colleges and 55 per cent to local colleges.

I hope these rather extended references to the McConnell-Medsker study whet your appetite for a more filling repast when the report is published. I believe it will have great significance for professional workers in the field of student personnel.

There is another study at the Berkeley Center involving characteristics of college students which was begun in 1958 and is attempting to analyze changes in student characteristics in a variety of educational environments over a five year period. The Social Science Research Council has made a grant in support of this study which is expected to be completed in the spring of 1963. All of us should give every encouragement to those who engage in this type of study and at the same time we should nurture a deep sympathy because of the tremendously involved and complex factors that must be considered and in some way quantified if any definitive findings are to result. To illustrate: In the outline of this particular project there is this statement

"We can study the same students as they move through college over time." We, and the writer of that statement, know that it is true only in a limited sense. There are many variables in addition to time which alter the identity of the individual. Measuring the impact of these variables, individual by individual, is a tricky business.

What I am leading up to is a little pendulum-swinging and an opinionated statement. The sponsors of the study state that several of the colleges cooperating in the study of differential selectivity and institutional impact "are subjecting themselves, their own processes and products, to more or less intensive scrutiny." To the extent that the forces in the colleges responsible for differential selectivity and institutional impact are diverted to the study of these phenomena, we are facing the dilemma of the engineer who must stop the train to blow the whistle. The defect in this figure lies in the fact that the same steam that blows the whistle also moves the engine, whereas, on the college scene, the individual responsible for impact is not always fitted for research, but if there is no one else to do it he will have to do it. If there is someone else, we are facing another dilemma because, on the college campus, the individual responsible for impact does not always look with favor upon the efforts of others to measure or appraise his effectiveness.

The foregoing is not to be considered as a plea for the discontinuance of the study of higher education but rather as a gentle reminder to centers and agencies responsible for the conduct of these studies of their equal responsibility not to interfere with the accomplishment of the aims and purposes of higher education. I can assure you that there is an awareness of this problem in the Office of Education in connection with the cooperative research program. It is difficult to maintain a balance between teaching and testing. There must be some stimulus before you can measure response.

Now let us look to the East for a research project or two that illustrate other approaches. The New England Board of Higher Education sponsored a research study of the "Attitudes of Undergraduates Toward College Teaching As a Career." The report of this study was prepared by Mary Kinnane, Dean of Women in the School of Education of Boston College. Conscious of present and imminent shortages of qualified college teachers, the New England Board, with funds provided by the Carnegie Corporation of New York, undertook to determine by questionnaire and interview, the attitudes of a sample of sophomores, juniors and seniors with a _B_ or better average grade in 45 colleges and universities in six New England states. Dean Kinnane's report deals with the responses of 3,418 students. She organized her report to show the college students' concept of (a) the role of the college teacher; (b) the working conditions of the college teacher; (c) the qualifications and preparation necessary for a college teaching career, and (d) the attractiveness and prestige of the career. The final section deals with the college students attitudes toward choosing college teaching as a career.

The students' image of the college teacher has these features: (a) the teacher finds equal satisfaction in helping young people and in research; (b) he is about equally satisfied with opportunities to remain intellectually alive and to help educate young people; (c) the ability to lecture and discuss is considered as most important to his success, followed by creative and original thinking and ability to work with people, whereas ability to write is considered as the least important. The students' prescription for graduate training for college teachers is not consonant with the recruiting demand of most collegiate departments where the acquisition of the Ph.D. gets high rating. Twice as many students (57 per cent) favored "the articulate person who teaches and communicates effectively," as the number (28 per cent) who preferred "the scholar with high competence in a specialized field."

The results of the inquiry regarding the college students' concept of the working conditions of the college teacher illustrate the problem arising from a rigidly structured questionnaire. The highest frequency (39 per cent) recorded for the easiest aspect of the college teacher's job was "faculty and student committee work," and at the same time, the highest frequency (38 per cent) recorded for the most difficult job was "routine paper work and committee assignments." Failure of the reporter to show the character of responses by significant types of institutions conceals rather than reveals. In this connection it should be pointed out that more extensive mining of the data obtained in completed studies would test many of the hypotheses set forth in proposed studies. The analyses by type of institution in the New England study give clues to the effects of differential selectivity which are being examined in the California study.

The final section of the Kinnane report is devoted briefly to a consideration of the college students' attitude toward college teaching as a career choice. It was found that 59 per cent of the total group think that the college teaching career decision is made in the last two years of college; 21 per cent think it is made during Master's degree study, and only one per cent during Doctor's degree study. An overwhelming majority of students (74 per cent) believe that the person principally influencing students to a career in college teaching is the college professor; 12 per cent credited the college advisor, and 10 per cent the graduate school professor.

A total of 62 per cent responded affirmatively to the question, "Have you ever given serious thought to the possibility of becoming a college teacher?" In Ivy League colleges the percentage was even higher (73 per cent) despite their pessimistic estimate of college teachers' salaries. In all institutions, 20 per cent more men than women say they have seriously thought of becoming a college teacher. When pinned down to a statement of their present career preference, only 14 per cent indicate that college teaching is now their first choice. Since the respondents were sophomores, juniors, and seniors, and since the percentage showing interest in college teaching increases about 7 per cent with each level, it seems reasonable to estimate that 20 per cent of graduating college students would indicate that college teaching is now their first choice of career. At the current annual rate of production of first level degrees this percentage would yield 77,000 baccalaureate degree holders whose career interests were focused on college teaching. The estimated average annual need for replacements and expansion of staff over the next 10 years is 47,000. There will then be an apparent excess of 30,000 annually -- a situation difficult to reconcile with the realities of the past. Here again is an example of the need to examine the data in depth to determine the relationship between supply and demand in specific subject-matter teaching fields and in the other professional administrative and research areas of higher education.

Much of the research activity at the University of Michigan Center is devoted to community surveys in which the characteristics, interests, and needs of high school seniors are examined. In view of the growing importance of selective admissions at the college level, these studies can have great significance for college personnel officers.

One study reported by Dr. Algo Henderson is concerned with background factors associated with success of entering students who are selected from the lower half of the high school graduating classes. It is expected that this study will be completed next month and should be of particular interest to institutions in which the selective function is largely exercised by the faculty during the first year; that is, after the students have enrolled.

We have mentioned and commented on a few representative studies which illustrate research activities concerned with college students. To be sure, the sampling was on a horizontal rather than vertical axis in the sense that the centers mentioned are on an East-West line rather than North-South. We will hope that Kenneth Wilson can establish equilibrium.

With your permission, Mr. Chairman, I would like to take a few minutes to comment on what seem to me to be areas that are being neglected in the arena of college student research. There is, in my opinion, a tendency to emphasize theoretical at the expense of action research. There are, for example, problems of housing and other facilities attending the growing urbanization of our population. Is a rural campus populated by city boys more rural or urban than a city campus populated by rural boys? Campus planners need more information of a practical nature about the needs of different groups of students in terms of the aims and objectives of the institution. How many of the so-called academic frills should be moved out of the classroom domain of the faculty into the domain of the dean of students in the student union? Could we not experiment with some of the newer teaching media -- television, teaching machines, etc. -- in connection with orientation programs? What is the relative productivity, variously defined, of scholarship funds versus student loan funds?

Action programs based on policies that are determined in the light of answers to practical questions such as these are more befitting an institution of higher education than are actions based on tradition carried out in a spirit of laissez-faire. Many colleges and universities are rapidly reaching the point where serious, objective, introspective analyses must be made if these institutions are to survive the competition in the pursuit of excellence.

THE COLLEGE STUDENT CHARACTERISTICS STUDY*

Junius A. Davis
Educational Testing Service

With the increasing size of applicant pools, a number of colleges are taking all or virtually all their freshmen from the top ranges of the Scholastic Aptitude Test and measures of past academic achievement. Although thus acquiring students who unquestionably have the ability for outstanding achievement, these colleges are frequently distressed with those students who for one reason or another fail to meet effectively the demands of the college situation.

In 1956, the Educational Testing Service drafted a request to the Alfred P. Sloan Foundation entitled "New Horizons of Testing," listing needed frontier research over the next five to ten years. The result was an unrestricted grant in February, 1957, of $25,000, to be used at ETS discretion "for general support of the activities, especially the research program of Educational Testing Service."

The area chosen for investment of these funds was that of non-cognitive or specifically personality factors related to success in college. Originally called the "Study of Personal Qualities of College Students," it was designed to define personal characteristics not tapped by conventional measures of ability and achievement but which were related to success in college or which represented traits valued by college faculties and administration, and to seek insight into the development and functioning of these traits through the use of personality research instruments.

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*A long term project of the Educational Testing Service, Princeton, New Jersey, variously supported by grants from the Alfred P. Sloan Foundation, the College Entrance Examination Board, and funds supplied by the parent organization.

It should be pointed out that this was not a simple attempt to develop a new test but rather to capitalize on the insights of faculty about students and their growth and development in college, to use tests and measurement techniques to explore some extremely promising territory, where information developed might be of interest to both educational and personality research people and to institutions of higher education.

For years, there has been a rapidly increasing interest in the prediction of success in college by other than intellective measures. More than fifteen hundred studies have been reported in the professional literature since Harris' review (1940). Fishman (1960) has provided an adequate summary of this work by stating:

> . . . It would hardly seem to be too much of an exaggeration to say that nearly every investigator of higher education has done a study predicting college achievement or adjustment. It also seems that every investigator has done only one such study.
>
> What is the upshot of all this research on college selection and guidance? Unfortunately, it can all be summarized rather briefly. The most usual predictors are high school grades and scores on a standardized measure of scholastic aptitude. The usual criterion is the freshman average. The average multiple correlation obtained when aiming the usual predictors at the usual criterion is approximately .55. The gain in the multiple correlation upon adding a personality test score to one

> or both of the usual predictors, holding the criterion constant, is usually less than .05.

In non-statistical language, this means that reasonably good prediction of grades is obtained from tests of intelligence and past achievement in high school, but that whatever the measure of personality (motivation, adjustment, perserverance, etc.) the improvement in prediction is so slight as to be of little if any practical use in selection and of no theoretical importance. Why, then, should ETS embark on a study in an area that has been particularly resistant to producing any practical or theoretical results?

A first glance at the type of work done is illuminating in this regard. One popular approach is to take a new personality or study skills test, administer it to a group of students, and abandon the effort when the relationships found are inconsequential. A second is the shotgun approach, with efforts to throw at students everything from selected personality scale items to biographical data ranging from availability of public library to toilet training; this produces a large number of item correlations with college grades, some of which are significant. Yet attempts to combine useful items have failed to produce a useful result. A third approach has been termed by Webb (1958) in a paper before the Southeastern Psychological Association, the "Let's see and try again" approach, where the experimenter has embarked on a long term study of students doing better than or worse than predicted, has formed some opinions as to differences in characteristics of these two groups, and has subsequently tested and discarded a number of hypotheses drawn empirically from year by year study. A host of hardy, but generally non-statistical, deans or clinical psychologists have interviewed students at admission or upon attainment of unusual achievement or lack of achievement; this usually produces excellent after-the-fact explanations, but has seldom if ever afforded reliable predictions of those likely to sustain difficulties.

The availability of modern computers has permitted speed in dealing with a variety of data, and refined statistical techniques, such as those concerned with moderator variables, have been employed. Yet, not much has come of all this. We have been unable to measure achievement motivation; unable to prove that class attendance, study time, or probation affects grades; or, unable to use clinical understanding except in postdiction, when it is too late to help the student or direct him to a more likely college environment.

Upon reviewing a few hundred of these studies, however, the reader is likely to become impressed with two additional facts: (1) the work has been piecemeal, with first one approach and then another tried and discarded, and with little serious effort if great initial enthusiasm for pet theories or tests, and (2) most studies use only the grade average or academic survival as criterion. Fishman (1960) has postulated that past achievement is of intellective as well as non-intellective content, and, in fact, so may be the "scholastic aptitude" tests constructed specifically for predicting grades, with items retained in the construction process which correlate with grades.

Yet, the problem of finding students who do not meet their pre-entrance promise, or the risk of rejecting students who would achieve significantly, or the possibility that grades reflect faculty prejudices and may not identify those of whom the college is ultimately most proud, all augur for continued attack. With the past experience in mind, it has seemed that a coordinated, well-financed, carefully implemented, and long term study is needed, through an agency with diverse theoretical and mechanical resources and ready access to large numbers of students in diverse environments: useful results will not come easily and quickly. Second, this study must start with attempts to build new criteria of success in college, for we may be predicting grades as well as we can as they are, if not as they should be. Third, this study must not focus solely on the internal individual differences of the student, but must capitalize on differences in environmental pressures and the insights of many involved staff. This same problem has, for example, resulted in a major commission by the College Board for a tri-partite review of the literature (proceeding under the direction of Paul Lazarsfeld) in the areas of non-intellective factors preceding students' entrance into college, contingent factors which characterize the college (see Barton, 1961), and modification and enlargement of the criteria of success.

Although the initial financial support was relatively small considering the size of the task, it was felt that this research was a particularly suitable major project for Educational Testing Service by virtue of its varied and extensive measurement research facilities, its capacity to sustain coordinated work over a range of institutions and for a long period of time, and its leadership role in educational research.

In the fall of 1957, eight highly selective colleges agreed to participate in the initial phases of the project under the direction of David R. Saunders at

ETS. These institutions included Amherst, California Institute of Technology, Cornell, Dartmouth, M. I. T., Rensselaer, Rutgers, and Stanford; all were institutions at or nearing the point where all applicants accepted should, in terms of the conventional indices, do satisfactory work in college and who were anxious to reduce further the mistakes in the admissions decisions.

Upon termination of the initial grant from the Sloan Foundation, support for the project was provided by the College Entrance Examination Board.

Purposes

The general purpose of this research is, therefore, to identify important desirable characteristics of students which are separate and apart from those characteristics defined by conventional measures of scholastic aptitude and achievement, as a basis for further research in non-intellective predictors and in new criteria of success. The most basic and immediate utility was seen in the potential for improving selection of students by providing admissions officers with systematic information on traits faculty value.

It was immediately foreseen, of course, that such a study, if successful, would have other implications. As colleges or departments within colleges may reasonably be expected to vary in what is considered to constitute desirable personal qualities of students, there may be important implications for guidance. Also, it was felt that the study might provide new leads in the evaluation and improvement of instruction by yielding orderly information on the personal qualities of students who can maximally profit from college, and the development of and change in these qualities as a result of various aspects of the college experience.

Initial Procedures

Although by virtue of its concern with student motivation, maturity, possession of intellectually-oriented values, creative imagination, spontaneity, and the like, the study might reasonably be expected to yield measures adding to the usual tests and achievement records for predicting success in college, it was first necessary to determine in careful and exacting fashion the kinds of qualities and behavior college faculty valued. A first step in the study was to obtain careful verbal descriptions of actual desirable and undesirable students. Faculty, in nominating and describing students, were asked to describe well-known students of these two extremes in each of the following categories: excellent academic record, average academic record, and poor or failing academic record. This, it was hoped, would produce information on students the faculty were happy to have or who they felt should attend college,regardless of academic average, as well as those who might achieve at high levels on the grade criterion but represent other qualities felt undesirable to sponsor. Such descriptions were gathered on about forty male students at each of the eight participating institutions.

In the meantime, large samples or the entire population of selected classes at these institutions were tested with two personality research instruments. These tests, the Personality Research Inventory and the Meyers-Briggs Type Indicator, were drawn from extensive empirical research at ETS extending back over the previous decade as well as from promising theoretical conceptions of personality. In most instances, the institutional representative or others at the colleges also had particular related research interests,and in many institutions other tests were administered as well. Data from these tests as well as usual records information formed therefore a pool of information on students who might later be subjected to refined evaluation by faculty or examined in terms of other criteria of desirability.

Parenthetically, it should be stated that the personality tests are not seen as potentially useful admissions instruments, but rather offer a basis for understanding and illuminating the kinds of traits found to be valued by faculty and their judgments of these traits. The work cited over the past three decades has shown that the kind of dynamic character traits we are seeking are complex and that simple approaches aiming at prediction with available instruments do not promise more than occasional highly tenuous results.

Relationship Between ETS and Participating Institutions

The project, from its inception, has been structured as a cooperative one among the ETS research facility and the individual institutions, rather than as a project where the institutions rather passively serve as experimental happy hunting grounds for data collection. Each institution has named one person, usually one concerned with institutional research with students, to serve as local idea man as well as liaison; these representatives have met once each year in two day conferences with ETS research staff to draw up and approve plans, to interject local interests and needs, to review preliminary findings, and to refine plans for further study. The project director at ETS has also visited the campuses (and will continue to do so) as the progressing work involves other faculty, administrative, and student groups. On the whole, the basic questions with which the study is concerned do seem to represent vital interests of the participating institutions; many have gone beyond the basic procedures of the research to draw from the developing data studies of unusual local interest. It is believed that this union and procedural structure have been mutually beneficial.

Summary of Recent Activities

The rich descriptive material obtained from faculty characterizations of "desirable" and "undesirable" students and their behavior was subjected to careful thematic analysis; this material was used to form the content of the "Criterion Rating Form," a series of rating scales and descriptive paragraphs which might provide the content found in the free descriptions of students but organized in a systematic way for more adequate and convenient evaluation of students.

One important phase of the work in 1960-61 has had to do with obtaining evaluations of students by college staff on the Criterion Rating Form, and subjecting these evaluations to extensive statistical analysis designed to perfect the rating form and at the same time obtain preliminary information as to useful simple structures that might summarize the data obtained. By internal and external analyses -- that is, by determining relationship between various items within the scale, as well as by seeking meaningful relationships between items and separate measures of student characteristics, work is proceeding to identify in a more sophisticated fashion the qualities faculty feel are important for students to possess and to provide simple quantitative summaries -- a "scoring key," in effect -- which will abstract the important data without gross injustice or loss of meaning. A search has been begun for meaningful correlates of these measures from the criterion form with the experimental personality test variables.

As noted, this research (although not excluding) is at its very inception going [illegible] usual grades or academic average criteria generally employed in [illegible] is not necessary to build a case for the importance of other abilities [illegible] grade-achievement which are important acquisites from the college experience. A reason many other studies have not dealt with multiple criteria of achievement is relatively simple; it has been difficult to construct reliable and valid techniques for defining and measuring these qualities. Faculty may agree that the student who acquires the trait of intellectual curiosity is a desirable student; yet, without rather elaborate research and provision of sound evaluation systems as a guide, it is difficult to get faculty to agree on the rating of a given student in this regard, or, indeed, how important this trait may be in comparison to other traits, say, hard work and dependability with regard to meeting academic requirements. But the hard experience of the past has led us to believe that to avoid our bones being littered on the desert of inconsequential results we must spend considerable initial effort obtaining the proper Conestoga wagon, or criterion, a problem in itself with regard to establishing reliable and valid assessment techniques.

Initial Findings

A first important finding, with regard to an ultimate promise of success for the study, is that the criterion instrument developed does provide a workable technique for obtaining meaningful evaluations of students beyond that provided by the academic standing. The instrument requires further refinement, but it is believed that it affords a primitive form of something that will prove very useful with further research and development.

Second, initial results from five institutions indicate that there is conceptual agreement among faculty and staff as to important student characteristics, and that this conceptual structure is relatively simple and reasonable. At present, we are involved in a factor analysis (a refined statistical technique for reducing complex data to its simplest structural form) of the ratings to determine the essential content or groups of related student characteristics that faculty regard as significant.

For those unfamiliar with factor analysis, the process may be described in terms of a simple example. Suppose one had 20 different measurements of a given number of boxes: measurement #1 is the volume of each of the boxes, #2 is the longest distance between any opposing inside corners, #3, the smallest circumference possible, etc. If these 20 sets of measurements were subjected to factor analytic procedures, three basic factors or dimensions would emerge -- height, length, and width. Although the other measures may be meaningful for particular purposes (such as volume, to determine how many apples might be placed in a given box), each may be derived from the three basic dimensions of height, length, and width.

Thus it is in this study that although many separate traits are considered and evaluated or measured, the set of underlying dimensions is less complex. In our case of assessing rather complex human behavior with techniques infested with error, causing in itself some variation, not all of the variation in the ratings can be accounted for by several simple factors, but a fairly substantial proportion of it is explained in terms of the emerging dimensions. The statistical technique will reveal, from a mass of judgments, the relatively unitary constellations of traits which faculty observe and feel are significant. The content of these constellations is beginning to provide a view of how faculty, for their practical purposes, structure the dynamic traits of student behavior.

Finally, although refinement of procedures and track-down of elusive qualities are needed, the results seem to indicate in both criterion and in the experimental personality test variables a separate kind of evaluation from that afforded by the more conventional predictors (measures of intelligence and past academic achievement) and criteria (grades in college). In general, in this broader evaluation, the relationships between personality test measures and criteria, though small, occur in expected places and directions.

Plans for the Future

Thus, although the research is yet inconclusive, important progress has been made; steps tedious but essential to ultimate success are being taken. The first and second phases of the project (obtaining raw material for and constructing the criterion form, and preliminary testing of the criterion) have been completed.

The next steps may be summarized topically, if not temporally, as (1) continuing the refinement of the present criterion form and further study of its technical characteristics and applicability to new situations (viz., use by secondary school faculty in reporting to college admissions officers); (2) broadening the range of criteria (viz., focus on growth of students in college rather than simply labeling desirable characteristics or the derivation of criteria in terms of post-college success or by study of how other significant groups than faculty characterize desirable students); (3) broadening the base of personality or other non-cognitive tests used to define and illuminate the traits or syndromes emerging from the faculty ratings.

In the coming year (1961-62), most of the attention at ETS will be directed toward small but sharp studies designed to answer such questions as these: Are there differences among groups of faculty within an institution (viz., humanities vs. natural science) in preferred student traits? To what extent do faculty agree on a given student? Are the approaches developed on students representing extremes applicable to mid-range or average students, or to other kinds of student groups (viz., girls)? What indices of growth along desirable lines may be developed, if qualities tapped thus far are relatively static? How do other significant groups characterize the successful students -- humane but successful world leaders, other students, administration, trustees, admissions officers, etc?

This refinement and broadening should permit a third major phase of the study over the range of institutions participating in the first phases, probably to begin in 1962-63. The current year, in addition to the small refinement studies, is being devoted to further analysis and digestion of preliminary data acquired thus far, to integrating developing findings from other related ETS studies such as that concerned with the definition and measurement of creativity, the delineation and impact of student sub-cultures, and the ongoing work in personality theory and mathematical-statistical models.

Thus in its function of conducting basic research, ETS is embarked on a study which we believe may add important findings related to measurement and definition, and which may become part of a core of concern for understanding the educational process as well as the individual immersed in it.

REGIONAL PROFILE OF COLLEGE SENIORS

Charles M. Grigg
Florida State University

This report deals with only one aspect of a study of the career plans of college seniors, Class of 1960. The data reported represent information drawn from a sample of 31 institutions located within the 16-state area affiliated with the Southern Regional Education Board. In selecting institutions, all accredited, four-year colleges and universities in the 16-state area were first classified according to size of student body and type of control -- public versus private. From each of the resulting strata, colleges were drawn in proportion to their representation of the total student body of the region. Within each college a quota sample of seniors was drawn, based on the size of the institution's senior class.

A questionnaire was sent to each of the seniors selected, with distribution of the questionnaire being handled by the Institute for Social Research. Items were oriented around three basic areas: socio-economic background variables (e.g., parental education, parental income, occupation of father); career-related decisions and plans (e.g., choice of major field, plans for graduate study) and factors affecting them; and attitudes and values (e.g., as reflected in student feelings regarding the primary purpose of a college education, types of factors which are important in choice of an occupation, etc.).

The study was designed to provide evidence regarding the career plans of college seniors and factors associated with those plans. In the conceptualization of this design, the career plans of seniors are thought of as consequent variables, socio-economic factors related to family background of the seniors as antecedent variables, and experiences during the college year -- e.g., contacts with faculty or with counselors -- as intervening or moderating variables. In order to understand how a student arrives at certain career decisions, it would be ideal to follow the process through time. However, a longitudinal study was not considered feasible and it was necessary to ask the student to reconstruct certain events in his college life; events related to the structure of the college and aspects of college life which may have influenced career decisions. We were particularly interested in the question of the extent to which contacts with the college faculty and with general counseling personnel were perceived by students as influences on career decisions.

In addition to studying the plans expressed during the senior year, a follow-up study was made in September, 1960, in order to obtain information about the actual pursuits of these students following graduation.

The present paper deals only with that part of the study which concerns the socio-economic background of the student. Its primary purpose is to point up the extent and nature of variation among colleges and universities with respect to the background factors under consideration and to consider sex differences in socio-economic background.

Description of the Sample

Table 1 gives a description of the total number of seniors represented in each of the institutions selected for the study, the size of institutional samples selected, and the percentage of returns from each of the institutions. The overall return was 73 per cent, but there was considerable variation by institution, ranging from approximately 50 to 95 per cent. This included at least two follow-ups to the original questionnaire. The cooperation of each institution was outstanding and differences in response rate must be accounted for by other factors.

Selected Student Characteristics

Marital status of college seniors

In recent years there has been a noticeable increase in the number of married students, both male and female, attending college. Are Southern colleges following this trend? As shown in Table 2, 36 per cent of all the males and 18 per cent of the females indicated that they were married. Compared to a similar study done one year earlier, there has been a slight upward trend in the number of male married students at the institutions sampled. In the earlier study, which involved only 15 institutions, the percentage of male students indicating that they were single was 65.4 per cent as compared to the 63.2 per cent in the present study.

A comparison between the two studies indicates a more noticeable increase in the number of married female students: from 10 per cent in the earlier study to 18.3 per cent in the present survey. It is clear (see Table 2)

Table I

Description of Size of Sample Selected and
Per Cent of Response by Institution

Institution	Total No. Of Seniors	Size of Sample	Number Returned	Per Cent Returned
TOTAL	15,497	8,197	6,012	73.3
Barry College	85	85	81	95.3
Baylor University	735	368	203	55.2
Bethany Nazarene	111	111	99	89.2
The Citadel	326	326	251	77.0
Emory University	340	340	223	65.6
Emory and Henry College	89	89	75	84.3
George Peabody College	166	166	108	65.1
Georgia State College	308	308	189	61.4
Millsaps College	132	132	126	95.5
N. E. Louisiana State College	291	291	193	50.8
N. W. at Oklahoma	152	152	109	71.7
N. W. Louisiana State College	272	272	235	86.4
Presbyterian College	105	105	81	77.1
Sam Houston Teachers College	435	435	277	63.7
Southern State College	95	95	83	87.4
S. W. Louisiana Institute	593	296	191	64.5
S. W. at Memphis	109	109	104	95.4
Texas Technological College	974	487	367	75.4
University of Louisville	426	426	271	63.6
University of Kentucky	1045	348	220	63.2
University of Maryland	1023	341	252	73.9
University of the South	92	92	84	91.3
Wake Forest College	405	405	262	64.7
Washington and Lee University	196	196	164	83.7
Wesleyan College	88	88	76	86.4
Winthrop College	181	181	165	91.2
Longwood College	143	143	122	85.3
University of Florida	1724	431	323	74.9
University of Tennessee	1241	389	346	88.9
University of Texas	2010	502	329	65.5
Florida State University	1605	488	403	82.6

Table 2

Marital Status of College Seniors

Institution	Males				Females			
	Single	Married	Div., Sep., or Wid.	N. R.	Single	Married	Div., Sep., Wid.	N.R.
TOTAL	63.2	36.0	0.7	0.1	79.8	18.3	1.7	0.3
Women's								
A	-	-	-	-	94.6	4.8	-	0.6
B	-	-	-	-	92.1	7.9	-	-
C	-	-	-	-	90.1	9.1	0.8	-
D	-	-	-	-	84.4	15.6	-	-
Men's								
A	90.2	9.8	-	-	-	-	-	-
B	91.8	7.1	1.2	-	-	-	-	-
C	98.4	0.8	-	0.8	-	-	-	-
I Coed[1]								
A	61.0	38.6	0.4	-	83.8	13.8	2.6	-
B	55.1	43.7	1.2	-	83.2	14.7	2.2	-
C	61.2	38.3	0.5	-	74.6	23.9	1.5	-
D	46.1	53.9	-	-	68.4	27.8	2.6	1.3
E	61.3	38.7	-	-	68.9	25.7	5.4	-
F	61.4	37.7	0.9	-	88.5	11.0	0.5	-
II Coed[2]								
A	71.2	27.6	0.6	0.6	91.8	8.2	-	-
B	59.2	39.8	0.9	-	71.2	27.3	1.5	-
C	50.2	48.1	1.7	-	69.7	25.0	5.2	-
D	63.5	36.5	-	-	81.8	18.2	-	-
E	60.0	39.0	0.5	0.5	75.0	22.2	2.8	-
F	28.7	70.7	0.6	-	41.7	54.2	4.2	-
G	83.0	17.0	-	-	79.3	18.4	1.1	1.1
H	66.9	33.1	-	-	84.3	13.3	2.4	-
III Coed[3]								
A	81.6	16.3	2.0	-	90.7	9.3	-	-
B	45.0	55.0	-	-	72.7	27.3	-	-
C	77.8	22.2	-	-	57.1	28.6	-	14.3
D	53.9	46.1	-	-	68.5	29.8	1.6	-
E	35.7	64.3	-	-	40.9	52.3	6.8	-
F	48.1	48.8	2.3	0.8	60.9	37.5	1.6	-
G	82.5	17.5	-	-	87.3	12.7	-	-
H	53.6	46.4	-	-	72.2	22.8	5.0	-
I	68.4	28.9	2.6	-	88.9	11.1	-	-
J	38.2	61.8	-	-	77.3	20.5	2.3	-

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[1] Institutions with over 1000 seniors. [2] Institutions with from 300 to 999 seniors.
[3] Institutions with less than 300 seniors.

that the institutions with the largest percentage of married students are the public institutions located in large urban areas. This observation was also true in the previous study. Another observation relating to married students, which pertains to both studies, is that the per cent of married students is much smaller in an all-male or an all-female college than in a coeducational institution.

It is not unreasonable to state that, in the region where one out of every three male college seniors and one out of every five female college seniors is married, this condition exerts an influence on the college culture of today. The variation among institutions is great. Among the coeducational schools, there are some campuses where seven out of ten male seniors are married and others where only one out of six are married. Among the females, the range is from one half of the seniors to only one tenth being married.

Size of community

The population of the United States is becoming more urban at each census. The South as a region has a larger rural population than the United States as a whole. Are those facts reflected in the place of residence of our college seniors? Are we drawing a disproportionate number from the rural areas or are we drawing more than a representative share from large urban and metropolitan areas? Table 3 divides the population into three classifications of community size: the rural population (under 2500), the urban (2500 - 99,999) and the metropolitan (100,000 and over). It is clear that the majority of these seniors came from an urban environment. However,

Table 3

Percentage Distribution as to Size of Community Student Spent Most of Life

Institution	Males			Females		
	100,000 & over	2,500 99,999	Under 2,500	100,000 & over	2,500 99,999	Under 2,500
TOTAL	26.1	54.5	19.4	31.1	35.6	23.3
Women's						
A	-	-	-	6.6	50.3	43.1
B	-	-	-	26.3	63.1	10.5
C	-	-	-	19.0	43.8	37.2
D	-	-	-	54.6	41.5	3.9
Men's						
A	57.1	32.0	11.0	-	-	-
B	33.0	54.2	13.0	-	-	-
C	36.8	52.8	10.4	-	-	-
I Coed[1]						
A	46.5	41.5	12.1	43.8	43.8	12.6
B	34.3	43.0	22.7	27.4	44.2	28.4
C	72.4	19.2	8.5	62.7	22.4	15.0
D	19.2	46.1	34.8	25.3	53.2	21.5
E	49.2	43.1	7.6	40.6	55.4	4.1
F	33.2	56.7	10.1	39.5	50.1	10.4
II Coed[2]						
A	21.2	55.8	22.9	16.5	58.9	24.7
B	78.7	14.3	7.0	77.3	15.1	7.5
C	23.7	52.9	23.4	35.5	39.5	25.0
D	13.6	58.8	27.7	9.0	75.0	15.9
E	18.0	47.1	34.8	31.5	46.4	22.3
F	61.6	23.8	14.6	75.0	12.5	12.5
G	37.8	50.5	11.8	54.2	35.5	10.3
H	35.6	50.0	14.4	36.7	54.2	9.6
III Coed[3]						
A	61.2	32.6	6.1	53.7	33.4	13.0
B	-	70.0	30.0	-	68.1	31.8
C	20.8	58.4	20.8	14.3	57.1	28.6
D	3.9	64.3	31.8	6.3	45.4	48.5
E	2.9	38.5	58.6	-	31.8	68.2
F	3.9	64.3	31.8	6.3	45.4	48.5
G	15.9	53.9	30.2	27.0	55.6	17.4
H	53.6	25.1	21.4	46.8	30.4	22.8
I	7.8	50.0	42.2	19.5	38.8	41.7
J	20.0	50.9	29.1	18.1	47.9	34.0

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[1] Institutions with over 1000 Seniors. [2] Institutions with from 300 to 999 Seniors.
[3] Institutions with less than 300 Seniors.

there is a noticeable difference between the males and females in this respect; males come somewhat more frequently from the urban and rural communities, the females are drawn somewhat more from the metropolitan areas. On the whole, however, there is a great similarity as to the size of community from which both male and female seniors are recruited.

There is considerable variability, however, among institutions as to where they recruit their students. Some institutions recruited as high as 59 per cent of their college seniors from rural areas. One institution recruited at least 68 per cent of female seniors from rural areas. This is in contrast to the other extreme where 78 per cent of the males were recruited from metropolitan areas. There were also several institutions which recruited females from metropolitan environments, with as high as 77 per cent of the senior class reporting that this is where they spent most of their life. The phenomenon is, of course, partially a function of the location of the institution.

This emphasis on the community of orientation is important for the indirect effects it has on both the student and the institution he attends. It is generally recognized that students coming from rural areas do not tend to be as well prepared as those from the larger metropolitan districts. Another effect that the size of community might have on these college students is in relation to their occupational aspirations. There have been several studies in which a relationship between size of community and levels of occupational aspiration has been reported.

Family income

Family income, education of mother and of father, and occupation of father are closely related in a matrix which might be classified as an indicator of social position. Table 4 groups income into three broad classifications: under $5000 per year, $5000 to $9999, and $10,000 and over. If we accept the current figures that the median family income of the United States is around $5500 a year, then our students tend to come disproportionately from the higher income families, with only some 30 per cent of the male seniors and 25 per cent of the female seniors coming from families with incomes below $5000 yearly. The variability among institutions with respect to family income distribution is very great. At one extreme there is an institution in which over 66 per cent of the male students' families are classified with yearly incomes over $10,000 while at the other there is an institution in which 65 per cent of students report family income under $5000 per year. The variability in family income among the females is not as great.

Education of father

It has often been mentioned in a half joking way that the parents of college students have little understanding of what a student does in college. If the parent's understanding of what a student does in college is based on his own experience, then this cliché is quite true. As shown in Table 5, 62 per cent of the male seniors report that their fathers had not attended college. In other words, almost two thirds of these male seniors have attained an educational level much higher than that of their fathers. Among the

Table 4

Percentage Distribution of Family Income

	Males				Females			
Institution	Under 5000	5000 9999	10,000 over	N. R.	Under 5000	5000 9999	10,000 over	N. R.
TOTAL	30.3	42.5	21.9	5.3	25.6	41.5	23.4	9.4
Women's								
A	-	-	-	-	38.9	41.9	9.0	10.2
B	-	-	-	-	21.1	30.2	30.3	18.4
C	-	-	-	-	39.7	41.3	14.0	5.0
D	-	-	-	-	27.3	33.8	13.0	26.0
Men's								
A	6.1	19.6	66.2	8.0	-	-	-	-
B	12.9	31.8	48.2	7.1	-	-	-	-
C	8.4	54.0	33.6	4.0	-	-	-	-
I Coed[1]								
A	29.5	41.9	25.7	2.9	16.3	36.3	35.0	12.5
B	30.0	45.0	19.0	6.1	17.8	44.2	32.7	5.3
C	25.6	41.0	25.5	7.9	9.0	47.8	35.9	7.5
D	34.8	48.2	14.1	2.8	21.5	39.2	31.7	7.6
E	13.3	43.9	25.8	17.0	20.9	47.3	28.4	3.5
F	27.7	45.5	20.5	6.4	16.5	41.7	29.1	12.6
II Coed[2]								
A	33.5	47.6	13.5	5.3	24.7	43.6	21.1	10.6
B	26.0	52.7	14.2	7.1	22.7	45.4	27.2	4.5
C	29.5	43.6	23.4	3.4	17.1	42.2	35.6	5.3
D	53.4	34.4	10.2	2.0	31.8	40.9	18.2	9.1
E	37.5	43.6	15.9	3.1	28.7	46.3	19.5	5.6
F	20.2	60.3	12.2	7.3	37.5	54.2	8.4	-
G	12.6	37.8	45.2	4.4	17.2	32.1	44.8	5.7
H	28.8	49.2	18.7	3.4	25.3	44.6	21.7	8.4
III Coed[3]								
A	22.4	44.9	30.6	2.0	7.4	44.4	37.1	11.1
B	56.7	28.3	5.0	10.0	27.2	45.4	27.2	-
C	28.5	36.1	19.4	16.0	42.9	14.3	-	42.9
D	65.2	27.9	3.5	3.5	40.3	37.9	14.5	7.3
E	50.1	41.4	8.5	-	36.4	47.7	11.4	4.5
F	49.6	38.0	10.1	2.3	37.5	37.5	17.2	7.8
G	31.8	41.3	22.1	4.8	25.4	38.1	23.8	12.7
H	39.3	39.2	21.5	-	21.5	45.6	21.5	11.4
I	50.0	39.5	5.3	5.3	38.9	41.6	16.7	2.8
J	47.3	41.8	3.6	7.3	36.3	50.0	4.5	9.1

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[1] Institutions with over 1000 Seniors. [2] Institutions with from 300 to 999 Seniors.
[3] Institutions with less than 300 Seniors.

Table 5

Education of Father

Institution	Males H.S.-Less	Males Some Coll.	Males Comp. Coll.	Males Grad.-Prof.	Females H.S.-Less	Females Some Coll.	Females Comp. Coll.	Females Grad.-Prof.
TOTAL	62.3	15.7	10.7	11.2	54.6	19.0	11.5	14.6
Women's								
A	-	-	-	-	62.3	18.6	10.2	9.0
B	-	-	-	-	32.8	28.9	23.7	14.4
C	-	-	-	-	66.1	17.4	10.7	5.8
D	-	-	-	-	63.7	11.7	9.1	15.6
Men's								
A	17.2	19.0	30.1	33.9	-	-	-	-
B	25.9	28.2	16.5	29.4	-	-	-	-
C	47.6	17.2	23.2	11.6	-	-	-	-
I Coed[1]								
A	55.9	16.6	14.9	12.5	33.8	26.3	13.8	26.3
B	64.4	19.0	8.5	8.1	45.2	22.1	13.7	19.0
C	58.0	17.6	11.2	13.3	49.3	17.9	10.4	22.4
D	68.1	14.9	6.4	10.6	53.3	17.7	16.5	12.7
E	56.9	20.2	9.3	13.7	47.3	23.0	13.5	16.2
F	68.1	12.7	10.0	9.1	46.2	26.9	13.2	13.7
II Coed[2]								
A	64.2	14.7	10.6	10.6	58.9	9.4	9.4	22.3
B	71.6	11.4	9.0	8.0	57.5	13.6	10.6	18.2
C	71.8	15.8	6.2	6.2	43.4	28.9	13.2	14.5
D	78.4	12.8	4.7	4.1	66.0	13.6	9.1	11.4
E	78.4	10.3	4.1	7.1	64.7	19.4	3.7	12.0
F	76.8	11.0	8.5	3.6	41.7	25.0	20.8	12.5
G	38.5	21.5	14.8	25.2	37.8	21.8	17.2	23.0
H	60.9	18.6	10.2	10.2	48.1	22.9	12.0	16.8
III Coed[3]								
A	38.8	18.4	20.4	22.5	37.2	18.5	20.4	24.1
B	93.3	3.3	-	3.3	81.8	9.1	-	9.0
C	55.6	23.6	13.9	6.9	28.6	28.6	14.3	28.3
D	85.2	7.8	1.7	5.2	73.4	12.9	4.8	8.9
E	84.3	8.6	4.3	2.9	77.2	20.5	-	2.3
F	78.4	10.9	6.2	4.7	70.4	14.1	9.4	6.3
G	39.7	25.4	19.0	15.9	52.4	15.9	17.9	14.3
H	78.6	14.3	3.6	3.6	55.6	15.2	12.7	16.5
I	60.6	15.8	10.5	13.1	58.3	8.3	11.1	22.2
J	74.5	16.4	3.6	5.5	70.4	11.4	4.5	13.6

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[1] Institutions with over 1000 Seniors. [2] Institutions with from 300 to 999 Seniors.
[3] Institutions with less than 300 Seniors.

girls a similar situation exists with 54 per cent indicating that their fathers had an education less than college. The educational attainment of the girls' fathers is a little higher than that of the fathers of male seniors.

One out of every four students in our sample has a father who has completed college but there is considerable variation among institutions. At one college, 93 per cent of male students reported fathers with no college attendance while at the other extreme there are institutions where at least 60 per cent of the males indicated completion of college or higher educational attainment for the father. Among girls in some institutions over 80 per cent report their fathers' education as less than college. The other extreme is represented by an institution where 44 per cent of the females report their fathers' education as college or higher.

Education of mother

The educational attainment of the mothers of the students in this sample has a somewhat similar distribution. Among the male seniors 64 per cent of the students reported that their mothers did not attend college. Among the females 53 per cent listed their mothers' education as high school or less with 24 per cent stating that their mothers had completed college or beyond. The variation among colleges is great with the range for male seniors being from over 45 per cent to a low of 6 per cent of the mothers completing a college education or an advanced degree. Among the females the institutional high for mothers' educational level was 57 per cent, with a low of 7 per cent. At some colleges 78 per cent of the females reported the highest educational attainment of the mother as less than college. In view of these statistics it is no wonder that the average college student has difficulty in communicating with his parents concerning college life and the problems which he or she faces in the average institution. There is little basis for communication on the parents' part since collectively few have ever completed a college education. College education as an avenue of upward mobility is clearly demonstrated in these statistics.

Father's occupation

The fathers' occupations reported by the college seniors were grouped into the ten census classifications, plus an additional one for unemployed, retired, disabled, or deceased. The distribution of the fathers' occupation for the colleges involved is varied particularly as it relates to the image that the student has of himself and to his occupational aspirations. Approximately 41 per cent of the male seniors and 45 per cent of the female seniors listed their fathers' occupations as either professional or managerial in nature. Here, as in the other measures of social position, there is considerable variation among institutions. Is there a difference in the climate of an institution where some 69 per cent of the college seniors report that their fathers have occupations of professional or managerial nature as compared to an institution reporting only 15 per cent of the fathers in this classification? Among the females the variation is similar, ranging from 66 per cent to 15 per cent who report their fathers' occupations as either professional or managerial.

Overview

Students now in college are more representative of our total population than ever before, Students are drawn from all socio-economic brackets, although there was considerable variation in selection by institutions in many of the socio-economic measures, in addition to the variations we have seen by institutions, there is also an obvious difference by sex.

Ignoring the elements of diversity which have been considered, if the modal category for each of the characteristics discussed is used, a composite picture of the college senior can be constructed. The college senior of 1960 is single, comes to college from an urban community between 2500 and 100,000 population and is a member of a family in which parents have a maximum of a high school education with a family income between $5000 and $10,000 per year, and in which the father is employed as either a manager or proprietor. This average senior, however, has many classmates with different socio-economic backgrounds. This results in considerable diversity within and among the 31 institutions -- diversity which has important ramifications for higher education.

SOME RESEARCH ACTIVITIES CONCERNED WITH NON-INTELLECTIVE FACTORS IN STUDENT ACHIEVEMENT AT MORGAN STATE COLLEGE

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Morgan State College, along with many other institutions of higher education, is constantly seeking ways to more effectively use its teaching resources in the attempt to assure educational opportunity for the increasing number who desire to study beyond the secondary school. In addition to the problem of providing enough qualified teachers for this increasing enrollment, there is the related problem of increasing the effectiveness of our guidance resources and facilities in coping with the many problems which seem to be inherent in large enrollments. While it is highly important that we have enough qualified teachers to go around, it is equally important, in the matter of providing educational opportunity, to see that each student enrolled is given an opportunity for growing and developing in keeping with his or her potential for growth and development. Such an opportunity will not have been provided should a student become a "drop-out" or otherwise fail to make normal progress towards realizing his potential because of factors within the college environment. Many of our efforts to meet these two problems have been focused on the freshman and sophomore class levels where large enrollments tend to make these problems more critical.

In attempting to meet the first problem of providing enough qualified teachers for large freshman enrollments, the college is experimenting with independent or self-directed study and learning programs. The hope here has been that teacher resources can be conserved by placing a greater responsibility on the student for a larger part of his education. It has been assumed that under the traditional classroom, highly structured, teaching-learning situation there is a waste of the teacher's time in directing the learning efforts of students in areas where self-directed study would be just as effective. Under a plan of independent study, it is further assumed, the teacher's contact time with students can be more profitably devoted to those learning areas where his assistance is indispensable. In attempting to meet the second problem of giving every student a chance to succeed, the basic innovation at the college has been a differentiated curriculum (three track plan) at the freshman level with increased emphasis on counseling, guidance, and remedial (developmental) activities.

The goal of much of our current research, in connection with the above mentioned programs, has been to obtain new insights into student progress and achievement by collecting information which will provide a better understanding or a valid description of the college environment and of the many students and student groups performing in this environment. Some of the student groups studied recently with the view of getting a better conception of the type of personality likely to be successful in this college environment have been the high and low achievers in independent and regular study and learning programs, drop-outs (those who quit voluntarily and those dropped by the college) and stay-ins or those who persist until graduation from the college, etc. Since we had already collected many data on the more intellectual type variables associated with the performance of these various populations, the more recent studies have been concerned with the personal, or non-intellective type variables not usually assessed through tests of intellectual competency or scholastic aptitude tests.

Independent Study Research

In our attempt to compose a model of the type of personality likely to be successful in independent study and learning situations, three or four frequently used instruments have been employed. Two of these instruments have been the *Activities Index* which purports to identify some 42 *personal* or *need* variables, and the *College Characteristics Index* which assesses 42 *press* situations corresponding to the *need* variables in the above mentioned instrument. Two other instruments used were the *California Psychological Inventory* (CPI) which is designed to assess 18 personality variables, and the multiple-choice group-Rorschach technique. This latter instrument was discontinued after early pilot studies in which its use did not seem to be fruitful. In these same studies, three criteria were used as indices of achievement. These were (1) a final achievement level (raw score on an objective-type final examination), (2) an effort score (obtained achievement test score minus score predicted on the basis of aptitude), and (3) a gain score (the difference between the pre-test and final examination score).

Major Hypothesis:
(Independent Study Research)

The central hypothesis giving rise to the investigation reported here was that the performance (academic achievement) of freshmen (at Morgan State College) in independent study and learning programs is affected by "personal" and "situational" variables. (Personal variables are defined as those variables of a non-cognitive or non-intellective nature, which are not usually assessed through the use of tests of intellectual competency or scholastic aptitude.)

Some of the specific questions posed for this study were:

1. If the factor of intellectual competency is held constant, is it possible, through an assessment of other personal variables, to discriminate between high and low academic achievers in independent study programs?

2. Are personality configurations associated with high achievers in independent study programs different from those configurations associated with low achievers in these programs?

3. Are personality configurations associated with high achievement in the regularly constituted classroom situation different from those configurations associated with high achievement in the independent-study type situation?

4. If discrimination among high and low achievers in independent study situations can be accomplished through methods of personal assessment, will such methods involve a multi-dimensional or a uni-dimensional approach?

5. To what extent are personal variables associated with high or low achievement in independent study and learning congruent with situational variables in the college culture? (Congruence of individual needs and environmental press.)

6. Are achievement prediction formulas (involving personal and situational measures) valid for one college freshman population also valid for other college freshman populations?

7. Will an assessment of personal and situational variables afford a more valid basis of selecting freshmen likely to be successful in independent study and learning situations?

Three groups of approximately 90 students each were used in the studies reported under the heading of independent study. Two of these groups were subjected to similar experimental and control conditions. One group operated as a control group during the first semester while the other group operated as the experimental group. During the second semester these two groups were switched, the control becoming the experimental and vice versa. The third group was subjected to what the college terms "modified" independent study procedures. An instructor met regularly with this group, but did not give any instruction in course content. The only help provided was in the area of "how to do it" such as techniques of study; how to use maps, graphs, charts; how to take examinations, etc.

Some Tentative Findings
(Independent Study Research)

Although the merit of independent study and learning procedures as against conventional procedures was not a prime consideration in these present studies, data on hand seem to indicate that students working under the independent procedures achieve at least as well as students working under more conventional procedures. The criterion of achievement was a final course examination score. In each case, scholastic aptitude was held constant.

Other tentative findings from the independent study projects were:

1. When effort score and final course examination score are used as criterion variables, two scales from the California Psychological

Index (CPI) showed small but statistically significant correlations in all three independent study groups. These two variables are Social Presence and Femininity. The correlation coefficients were as follows:

	Criterion Variable	
Scale	Effort Score	Final Examination
Social Presence	.16 (t=2.4)	.18 (t=2.7)
Femininity	-.20 (t=3.0)	-.17 (t=2.5)

The author of the inventory defines high scorers on the Social Presence scale as tending to be clever, enthusiastic, imaginative, quick, informal, spontaneous, and talkative; as being active and vigorous; and as having an expressive nature. Low scorers on this scale are described as being deliberate, moderate, patient, self-restrained, and simple, as vacillating and uncertain decision; and as being literal and unoriginal in thinking and judging. High scorers on the Femininity scale tend to be seen as appreciative, patient, helpful, gentle, moderate, perservering, and sincere; as being respectful and accepting of others; and as behaving in a conscientious and sympathetic way. Low scorers on this scale tend to be outgoing, hard-headed, ambitious, masculine, active, robust, and restless; to be manipulative and opportunistic in dealing with others, blunt and direct in thinking and action, and impatient with delay, indecision, and reflection.

2. Top- and bottom-quarter achievers in independent study (on the basis of scorers on the course final examination) were compared on three

theoretically relevant scales of the CPI (Achievement via Conformance, Achievement via Independence, and Intellectual Efficiency). Although no differences were statistically significant, the top-quarter group had higher mean scores on each variable.

3. In addition to the above mentioned analysis using the three scales on the CPI, top- and bottom-quarter achievers were compared using the other 15 scales of the CPI, and using both effort score and final examination score as the criterion variables. No significant differences were found between these high and low achievers on any of the 15 scales for either of these criterion variables.

4. The same types of comparisons were made with all groups using the 42 scales of the Activities Index. Those scales indicating significant differences (.01 or .05) for the two groups are given below. The raised "H" or "L" indicates whether the high or low achievers made the higher mean score.

	Criterion Variables	
	Effort Score (Critical Ratios)	Gain Score (Critical Ratios)
Adaptiveness	3.3^L	2.1^L
Dominance	2.7^H	---
Sex	---	2.4^L
Prudery	---	2.4^H

The author describes these scales as follows:

Adaptiveness -- acceptance of advice and criticism versus concealment or justification of failure or humiliation such as "admitting when I'm in the wrong -- having my mistakes pointed out to me versus concealing a failure or humiliation from others."

Dominance -- assertive or manipulative control over others as "persuading a group to do something my way." Influencing or controlling the actions of others.

Sex -- erotic interest or expression. Reading novels and magazine stories about love, daydreaming about being in love, etc.

Prudery -- denial of the expression of erotic interests or expression.

In order to examine the hypothesis that only a multi-dimensional approach in personality assessment would be fruitful in distinguishing high and low achievers in independent study situations, a cluster analysis was made using the data from the 18 scales of the CPI instrument and an "acquiescence score" computed by counting the number of "yes" responses on the CPI. (It is planned in later investigations to apply the discriminant function technique when greater control has been exercised in collecting the data for the achievement indices.) From this analysis, two clusters emerged for both high and low achievers.

5. The first cluster for the high effort group contained the three variables -- Capacity for Status, Social Presence, and Sense of Well Being. A second cluster for this same high effort group also contained three variables -- Tolerance, Achievement via Independence, and Non-acquiescence. The first cluster for the low effort group contained three variables -- Self-Control, Good Impression, and Achievement via Conformity. The second cluster for the low effort group contained the variables -- Dominance, Sociability, and Self-Acceptance.

The final tentative conclusion in the independent study investigation concerns data from the *need-press* instruments -- the *Activities Index* and the *College Characteristics Index*. It will be remembered that the hypothesis to be tested here was that student performance in independent study situations will be determined by *need* and *press* factor agreements. That is, if there is a low *need* for "academic pursuits" and if the college culture indicates a low *press* in this area, there will follow a low grade of theoretical or academic achievement on the part of those students with the low need in this area. This hypothesis also implies that, to use the same example, students with high academic *needs* operating in a low academic *press* environment will be successful in independent study situations if the need is strong or intense enough to overcome the prevailing press.

In assessing the college culture through the use of the *College Characteristics Index*, it was found that no dominant press emerged in the *theoretical-intelligence* or *persistence-striving* areas. *Order* and *affiliation* seemed to be stressed in the college culture. There was also a high press for *sex* and low press for *prudery*. Other areas of low press are *rejection*, *disjunctivity*, *placidity*, and *aggression*.

When the *needs* of high and low effort students were assessed through the use of the corresponding instrument, *Activities Index*, the following needs were revealed: For the high effort group there was indicated a need in the *persistence-striving* and the *theoretical-intellectual* areas (just the opposite of the college press). This need has been described as *counter-action* (a re-striving to overcome experienced frustration), *understanding*, *objectivity*, *reflectiveness*, and *humanism* (described as the manipulation of external social objects or artifacts through empirical analysis, reflection, and discussion). Other areas of need for this high effort group are *pragmatism*, *succorance*, and *deference*. Areas of need which emerged for the low effort group are *disjunctivity*, *autonomy*, *rejection*, *play*, *emotionality*, and *impulsion*. For this low effort group, the need in the *theoretical-intellectual* and *persistence-striving* areas is not characterized by a need for *understanding* as was the case in the high effort group. For this low effort group this same need is also characterized by *conjunctivity* (a need for organizing cognitive activities as in making plans and schedules, and a need for conforming behavior as in striving for perfection) which was not the case with the high effort group. Other needs which emerged for the low effort group were in the following broad areas -- *responsive - self-sufficient*, *dependent - deferent*, and *cautious - controlled*. These broad areas seem to be characterized by a need for affiliation, succorance, nurturance, adaptiveness, deference, order, and blamavoidance.

In examining the above data for the high and low effort groups, there were found *two* agreements for *press* and *need* among the high effort students and *six* such agreements among the low effort students. These agreements are given below.

High Effort Students (Over achievers)	Low Effort Students (Under achievers)
Order (high press and need)	Affiliation (high press and need)
Disjunctivity (low press and need)	Order (high press and need)
Rejection (low press and need)	Aggression (low press and need)
	Prudery (low press and need)
	Disjunctivity (low press and need)
	Rejection (low press and need)

Another type of analysis, using these same data, was to correlate the need and press scores for students in both high and low effort groups. These coefficients are .33 and .43 respectively. Again the greater magnitude of agreement between need and press factors seems to be for the students who have expended less effort in independent study situations at Morgan State College.

6. The tentative finding from the above data seems to indicate that those students who do not work up to their abilities (low effort) in independent study situations are likely to be the ones whose need patterns more closely agree with the prevailing press at the college. It will be remembered that there seemed to be no dominant press for academic pursuits in this particular college culture.

Non-Intellective Factors Associated With Student Achievement in the Regular College Program

Many of the studies reported in this section of this paper are based on data derived from administrations of the California Psychological Inventory (CPI) along with data from scholastic aptitude instruments (A. C. E. or College Abilities Test). In addition to the 18 separate scales included in the CPI, there has been a grouping of these scales into four broad categories, seeking to emphasize some of the psychological and psychometric clusterings which exist among them.

One of the first studies of high and low achievers involved freshmen whose cumulative quality point averages were at least 1.5 standard deviations above the mean (high achievers) and those whose quality point averages were 1.5 standard deviations or more below the mean quality point average of the group. The CPI scales on which there were significant mean differences (.01 level) and on which the high achievers earned the higher mean scores were Tolerance, Intellectual Efficiency, Communality, Socialization, Achievement via Conformance, and Achievement via Independence.

A similar study was made using groups of students on the college honor list and on the academic probation list. In this study, the factor of scholastic aptitude (A. C. E.) was held constant through matching. The following CPI scales seemed to discriminate (at .01 or .05 levels): Tolerance (.01) and Social Presence (.05). On these two scales, the honor students earned the higher scores. The third scale which seemed to discriminate was the Femininity scale (.05). On this scale the probation students earned the higher mean scores.

In a similar study, based on four semesters of work instead of two, it was found that the high and low achievers (top and bottom fifth) seemed to be distinguished by five of the CPI scales (.01 or .05 levels). On three of these scales, the low achievers earned the higher scores. These scales were Good Impression, Femininity, and Self-Control. The two scales on which the high achievers earned the higher scores were Flexibility and Self-Acceptance.

In a study of students who voluntarily dropped out of the college and those who were dropped by the college for scholastic reasons, it was found that there were significant differences (.01 or .05) on five of the CPI scales. On three of these scales the voluntary drop-out group had earned the higher mean scores. These scales were *Intellectual Efficiency*, *Flexibility*, and *Social Presence*. The two scales on which the "dropped" students earned the higher scores were *Socialization* and *Femininity*. It might also be pointed out that those dropped by the college had a significantly lower mean scholastic aptitude than those who dropped out voluntarily.

In a more recent study of those who dropped out (voluntarily or for scholastic reasons) and those who persisted, the factor of scholastic aptitude was held constant. Four of the CPI scales indicated significant differences (.01 or .05) for these two groups. Those still in school had higher mean scores on scales for *Intellectual Efficiency* and *Psychological Mindedness*. Drop-outs earned the higher mean scores for *Socialization* and *Achievement via Conformance*. When the 18 variables of the CPI were grouped into the four broad areas mentioned above and applied to this same population, it was found that there was a significant difference (.01) for the drop-outs and stay-ins in two of these areas. In both areas the "successful" group earned the higher mean scores. The two areas were (1) *Poise*, *Ascendancy*, and *Self-Assurance*; and (2) *Achievement Potential* and *Intellectual Efficiency*. When these same two groups were compared without holding the aptitude factor constant, there were significant differences (.01) on six of these CPI scales. The five scales on which those still in school made the higher scores were *Tolerance*, *Intellectual Efficiency*, *Psychological Mindedness*, *Flexibility*, and *Achievement via Independence*. The one scale on which the drop-outs made the higher mean score was *Self-Control*.

The final type of study to be reported here was concerned with the nature of the impact of the college culture on some of these personal variables assessed through the CPI. In this study, the CPI was administered to a group of freshmen admitted to the college and again at the end of two years to all of those who were still enrolled. This study revealed that on four of the CPI scales there had been significant (.01 level) increases in mean scores. These scales were *Capacity for Status*, *Social Presence*, *Achievement via Independence*, and *Flexibility*.

The Office of Evaluation and Research at the college is still engaged in further analyzing the data collected in connection with the projects reported here. It is emphasized that all of the findings reported here are tentative pending further analysis of the data.

BACKGROUND AND PERSONALITY FACTORS AND THEIR IMPLICATIONS FOR STUDENT SELECTION IN THREE WOMEN"S COLLEGES

Frederick B. Rowe
Randolph-Macon Woman's College

A college is continuously in the position of being evaluated -- of being chosen or rejected -- by both its present and its prospective students, teachers and supporters.

Among students, of course, turnover is constant. Each year one group (more accurately, several groups) departs and a new group enters. A two-way selection occurs in this process. The college chooses its students, but only within the framework of the prior choices of the students themselves. Once the prospective student is chosen, he may -- and often does -- decide to go elsewhere. Among those who finally do enter, the student retains the choice of transfer or withdrawal, the college that of dismissal.

Among faculty members, although turnover is smaller, the series of choices is roughly the same. The current shortage of qualified teachers seems likely to increase the rate of turnover.

In its relations with its supporters, most colleges have recognized and admitted publicly to a severe lack of understanding and support. The college has become the aggressor. Present and past supporters are being urged to continue and to increase their efforts in the college's behalf. New supporters are being sought among all groups directly or indirectly related to the college.

Under ideal circumstances, the decision of an individual to identify himself with an institution -- as a student, as a teacher, or as a supporter -- is rooted in an objective which he shares with others who make up the college. There is identity in what the college intends to be, what it actually is, and what people think it is. Moreover, under ideal circumstances, the college's reason for being is relevant to the needs of those it serves, and all people identified with the college are both conscious of those needs and feel a sense of urgency about their fulfillment. To the degree that such conditions exist, those who choose to affiliate themselves with an institution do so on a sound basis, enhancing the chances for a permanent partnership and for the satisfaction inherent in mutual endeavor toward a common goal.

Such ideal circumstances are probably most prevalent at the beginning of an institution's history; they are largely inherent in the circumstances which motivate the founders. Gradually, however, the "essence" of an institution becomes more obscure, and only conscious effort can recreate the original clarity. This obscurity is no less a natural phenomenon than was the original clarity. Obscurity is the product of transition; it may be rooted in the accomplishment -- partial or complete -- of the original mission of the institution, in the changing needs and definition of needs of society, or in the alliances formed with the institution by individuals for whom the college is a second choice (or even a tool in their pursuit of quite different ends).

Whatever the reasons for such vagueness in the definition of the characteristics of a college and its student body, it leads to choices based upon chance rather than understanding, and then to turnover, to the loss of harmony and teamwork, to disappointment and in some cases the permanent hostility of those who become identified with the college, only to discover that it is not what they had supposed it would be. Whether its deeper characteristics change or remain constant, the institution owes itself and those it serves a clearly defined, carefully articulated, description of those qualities which give it direction and identity.

Unfortunately, most colleges in this country, although each knows that it is significantly different from so-called "similar" institutions, have failed to go beyond the most obvious differences and the most general categories in identifying themselves. Few have even examined the more subtle implications of obvious differences. The terms which are most often used to distinguish one institution from the others are "small," "liberal arts," "quality," and a handful of others which have become as meaningless as these. This is true despite the fact that most educators will quickly agree that the more significant differences are those which are subtle, difficult to describe and even more difficult to measure.

Up until the last decade research on college student selection was mostly directed toward identification of the intellectual characteristics of the student populations of the colleges studied. In this research the investigators relied heavily on indices of academic ability such as the American Council on Education Psychological Examinations, the College Entrance Examinations and high school grades. Occasionally personality and interest tests were added to make up a measurement battery. While results, of course, varied from one study to another, multiple correlations of such predictors with success criteria (usually measured by college grade point ratios) typically yielded coefficients in the order of .50 to .70, which suggests that from 25 per cent to 50 per cent of the variation in success of the student was predictable from the test battery information.

In the last ten years a good deal of research on the characteristics of the college environment has been and is being conducted. The results of the various studies by Pace and Stern of Syracuse University indicate that striking differences do exist among college environments and that these differences can be measured.

It has been our opinion that application of the measurement of the college environment, or more properly the student's attitude toward the environment, to the selection procedures would probably increase the effectiveness of student selection.

We believe that colleges, now do or can do an effective job of selecting students who can accomplish the work required of them in our colleges; however, they fail to predict adequately the personality factors, especially attitude and motivation, which probably determine what the student will accomplish.

As our student population increases the temptation is to continually raise the academic standards for selection until only the high school student who stands in the top tenth of his class and has College Board scores in the 700's need apply. Obviously, this is not the case now nor is it likely to be in most institutions but, as Paul Woods has shown in a report made to the president of Hollins College, such selection standards would most probably greatly increase the percentage of graduates from those admitted to an institution. The problem of attrition at a college like Hollins or Randolph-Macon or Sweet Briar continually plagues the institution. About 50 per cent of those admitted fail to graduate. This seems to be about average for the nation as a whole and it represents a terrific loss in potential and a very considerable problem where the students transfer from one institution to another.

By the use of measurements of attitudinal and other personality factors, it may be possible to identify those student attitudes and motivations which make for retention and attrition. That there has been little success in doing so in the past is attributable, we believe, to the inappropriateness of the tests used for the purposes to which they were put. For example, the Minnesota Multiphasic Personality Inventory was designed to distinguish among different categories of disturbed persons, hence its use in the selection of college students has not been very fruitful due to its inadequacy for the task. The same might be said of many other attempts to predict college success from tests designed for other purposes. It seems to us that the idea of adding personality testing to the basic selection battery is good, but the proper tools were not available.

With the development of the College Characteristics Index (CCI) by Stern and Pace and the Activities Index (AI) by Stern, it would seem that the necessary tools may be available to increase the effectiveness of selection of college students. The CCI measures the environmental press on the student through a 300 item questionnaire. The AI, another 300 item questionnaire, measures the needs of the student. Through a measurement of the needs of the individual and his attitudes towards the pressures of his environment a step may be taken toward more accurate prediction of his response to the challenges and demands of college life.*

In an article in Current Issues in Higher Education, 1961, Pace has discussed what he calls the effective environment. "That which the students are aware of and agree with reasonable unanimity is true or not true about a college. The assumption . . . is that this aggregate or group awareness of students about their environment constitutes a press in the sense of exerting a directive influence on their behavior, or setting conditions with which they must deal."

Design of the Study

With the support of a grant from Southern Regional Education Board, a study is now being conducted at Randolph-Macon Woman's College, Sweet Briar and Hollins. These three small (student populations 600-700) liberal arts women's colleges have certain strong similarities which make them desirable for study. They are located in the same region of Virginia, only 50 miles separate the two most widely distant. Their student populations are almost entirely residential so that presumably the full effects of environmental press will act upon the students. Each college is more or less separated by spacious campus, distance, or red brick walls from the community in which it is located. The preparatory schools from which the students come overlap in many cases. The rates of withdrawal or transfer are very similar in all three schools.

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*Attachment A, page 153, contains brief descriptions of the need-press scales quoted from the Preliminary Manual by permission of George Stern Psychological Research Center, Syracuse University.

We have gathered from the college records the usual background data on the entire populations of each of the three colleges. Such factors as home location, distance from home, parental occupation, education, and marital status, number of siblings, position in family, religious affiliation, relationship to former students, type of preparatory school, high school rank and College Board scores have been recorded for each student. This fall the two Stern and Pace questionnaires will be administered and then descriptions of the student bodies will become available based on the above mentioned factors which will provide approximately 80 separate items of information about each student. It is also hoped that the College Characteristics Index will be completed by the officers and faculty members of each college although faculty cooperation in such research is more difficult to obtain than that of the "captive" students.

Once an initial description of the student populations has been accomplished it will then be possible to make comparisons of the various identifiable groups, that is, comparisons of each college with the others and comparison of each group with the others in the same college. Certain obvious comparisons such as differences between high and low achievers, between the four academic classes, between those who graduate and those who transfer or withdraw become possible. Since all data is being recorded on IBM cards and electronic computer service is available, the use of approximately 3000 cases is possible and sampling problems are pleasantly nonexistant. Questions as to the differences in the needs, patterns and attitudes toward the environment of the successful and the unsuccessful student, the productive and the unproductive student, the faculty "image" of the environment and the student "image" can be answered, within the limits of the data collected.

In the event that reliable differences are found among the various groups, it may then be possible to develop batteries of selection variables, by multiple discriminatory or regression analysis, which would be useful to the admissions personnel in their attempts to predict student success.

Results to Date

Most of the results currently available come from Randolph-Macon where pilot studies have been conducted during the last two years. There are, however, a few descriptive statistics in Table I that will show some of the similarities and differences among the three colleges.

College Board mean scores and private school percentages are based on a sample of 100 drawn from this fall's entering classes whereas the geographical distribution is based on the entire student body of spring 1961.

Table I

	Hollins	Sweet Briar	R-M.W.C.
Mean CEEB Verbal	565	575	565
Mean CEEB Math	519	543	541
Per Cent Private School	65	56	25
Per Cent South	57	55	73
Per Cent North	32	32	15
Per Cent Central States	8	9	8
Per Cent West	1	2	1
Per Cent Foreign Students	2	2	2

It can be seen that Hollins and Sweet Briar have almost identical geographical distributions whereas Randolph-Macon differs considerably in North-South percentage, being a much more heavily "Southern" college.

It can also be seen that there are major differences in the preparatory school backgrounds at these colleges with Randolph-Macon drawing a much greater public school clientele.

A few other facts can be given about the students at these colleges. They are predominantly Episcopalians, even at Randolph-Macon which is Methodist affiliated. Their fathers are most apt to be owners, executives or professional men who have received a college degree, married a woman with two or three years of college education, remained married to her and sired two children besides the student then attending one of the three colleges. A sizeable number of these fathers have the dubious privilege of paying for several college and preparatory school educations at the same time, which presumably works something of a strain even on their typically high income bracket salaries.

The results of testing done in the pilot studies at Randolph-Macon are shown in Table II. On the other sheets which have been handed out you'll find a general description of the CCI and then the abbreviation, title, and description and examples of each of the thirty subscales. Subscale scores can range from zero to ten. High scores indicate that the subjects see the environment as having high press in those areas, low scores indicate that the environment provides little press in the named areas. For example, among the seniors the mean CCI score of 8.73 on Aff, or Affiliation, indicates that the Randolph-Macon environment is one in which there is greatest press for close, friendly, reciprocal associations with others. On the other hand the lowest mean score among the seniors is found in the variable labeled Agg, or Aggression, which indicates that there is little overt or covert hostility towards other students or faculty or administration.

By inspection of the CCI means one can see those aspects of the environment which the students identify as most striking. The extent of agreement among the subjects can be found by comparing the senior class means with those of the freshmen in either first or second semester or by comparing freshmen attitudes in the first semester with freshmen second semester attitudes. As might be expected, the freshmen mean scores tend to be more like those of the seniors when they are tested in the second semester as compared with the first semester. Further indication of the extent of agreement among the subjects is found, of course, in the standard deviations presented in the center section of the table. A final indication of agreement or disagreement among the three groups may be found in the right-hand section

Table II

Seniors - N = 49 *
Freshmen I - N = 100, Freshmen II - N = 91

Sub-	AI Means	CCI Means			CCI S. D.'s			CCI Differences in Means	
scales	SRS	SRS	FRI	FRII	SRS	FRI	FRII	SRS vs. FRII	FRI vs. FRII
ABA	4.49	2.14	3.0	2.6	1.67	1.27	1.66	not sig.	not sig.
ACH	5.84	7.65	8.7	8.3	1.99	.89	1.30	sig. at .01	sig. at .02
ADA	5.43	5.04	5.3	5.5	1.53	1.11	1.49	sig. at .01	not sig.
AFF	7.61	8.73	7.3	7.0	.557	1.35	1.89	sig. at .01	not sig.
AGG	3.33	2.22	1.5	2.0	2.12	1.23	1.48	sig. at .05	sig. at .02
CHA	5.10	6.10	5.3	5.3	2.20	1.40	1.70	sig. at .01	not sig.
CNJ	5.78	8.14	8.6	8.4	1.73	1.10	1.94	sig. at .02	not sig.
CTR	5.82	5.14	5.5	5.6	1.38	1.15	1.78	sig. at .01	not sig.
DFR	7.33	4.10	5.7	5.2	1.33	1.69	1.62	sig. at .01	sig. at .05
DOM	5.65	4.71	4.4	4.3	1.45	1.40	1.62	not sig.	not sig.
E/A	5.16	5.80	7.5	6.5	1.24	1.21	1.57	sig. at .01	sig. at .01
EMD	5.10	7.42	8.2	7.7	1.33	1.20	1.48	not sig.	sig. at .02
ENY	6.69	7.02	6.8	6.4	1.60	1.55	2.01	not sig.	not sig.
EXH	2.82	6.10	6.9	6.4	1.51	1.51	1.96	sig. at .01	not sig.
F/A	2.43	4.70	5.5	5.1	1.18	1.18	1.57	sig. at .01	not sig.
HAR	5.53	8.00	7.9	7.7	1.09	.91	1.45	sig. at .02	not sig.
HUM	7.69	7.70	7.8	7.5	1.43	1.71	2.08	not sig.	not sig.
IMP	5.71	4.93	5.4	5.3	1.48	1.77	1.97	not sig.	not sig.
NAR	5.12	6.70	6.9	6.9	1.48	1.56	1.69	not sig.	not sig.
NUR	7.45	7.04	8.2	7.6	1.36	1.10	1.82	not sig.	sig. at .01
OBJ	8.98	8.00	8.3	7.7	1.72	1.58	1.95	sig. at .01	sig. at .05
ORD	5.14	5.91	7.3	6.8	1.40	1.44	1.58	sig. at .01	not sig.
PLY	5.76	4.30	5.7	4.9	1.42	1.60	1.91	sig. at .05	sig. at .01
PRA	5.88	3.10	4.1	4.2	1.34	1.36	1.76	sig. at .01	not sig.
REF	6.86	7.40	7.5	7.6	1.63	1.47	1.80	not sig.	not sig.
SCI	4.45	6.31	7.2	6.9	2.19	1.66	2.34	sig. at .01	not sig.
SEN	5.06	6.70	6.2	6.8	1.50	1.76	1.72	not sig.	sig. at .02
SEX	6.45	3.00	5.9	5.4	2.89	1.10	1.79	sig. at .01	sig. at .05
SUC	7.57	7.00	6.5	6.2	1.36	1.24	1.62	sig. at .01	not sig.
UND	6.55	6.80	7.6	7.3	1.28	1.57	1.71	not sig.	not sig.

*Seniors, Class of 1959, Freshmen I & II, Class of 1964 of the table. Here are presented the results of "t" tests to determine significance of the difference in the means, when seniors mean scores are compared with those of second semester freshmen and when the freshmen mean scores made on first semester testing are compared with means based on testing the same subjects during the second semester. Incidentally testing was done just before Thanksgiving vacation and spring vacation on the notion that the former period represents a high point in enthusiasm for college life among the students at Randolph-Macon, whereas the latter period represents a time when all the world is very gray indeed.

In order to present a verbal description of the Randolph-Macon environment, we have chosen arbitrarily as most salient those mean scores below four and above seven. Using these arbitrary points it might be said that Randolph-Macon seniors see the environment as one in which there's little press for self-depreciation and devaluation, little overt or covert aggression, little emphasis on the practical and concrete reality, and little emphasis on erotic interest or expression. The freshman finds no significantly different press for abasement but does find a significantly smaller amount of aggression. The freshmen also see a significantly greater pragmatic press and also their view of the press for sex interest and expression is significantly higher. (Possibly wish fulfillment is a stronger part of the freshman sex life.)

The seniors high press items would lead to further description of the environment as one in which there is strong emphasis on personal achievement, close friendly relations with others, a highly organized social and academic life, a situation in which open expression of emotions finds easy acceptance and where energetic effort is typical. They also find an atmosphere concerned with the physical well being of the student, where there is considerable emphasis on fine arts, social sciences, and humanities, where a benevolent paternalism (or perhaps maternalism would be a better term in a woman's college) pervades the environment. Finally, the seniors see Randolph-Macon as a place where introspection, reflectiveness and spirituality are highly acceptable yet a place where dependence on others rather than independence and rebellion are important values.

The freshman "image" of the environment seems to be essentially the same in all major details and, as has been noted before, the freshmen tend to move in the direction of senior opinion as their tenure increases. There are many statistically significant differences found among the mean scores which suggest the possibility of help from the CCI in further detailed analyses of the different groups found in the colleges.

By comparing the AI means for seniors with the CCI means we can obtain some information about the needs patterns and how closely they are in accord with the environmental press. From an examination of the first two columns of Table II, we can take examples to describe these relationships. In the first row the Aba, or Abasement, entries show that the seniors feel a greater need for self-depreciation and acknowledgment of their mistakes and failures than the environment demands of them. In the second row, the Ach, or Achievement, entries show that the students feel less need than the environment provides for competition for grades and the difficult business of proving one's personal worth.

I am sorry that so few results are available at this time. The rest of my information is largely based on impressions and hunches, so I'll not report further on it.

Implications of the Study

To conclude my presentation, I'd say that we are encouraged by the nature of these preliminary findings for they point out that some significant differences do exist between the colleges and between the groups within them. There seems to be a real possibility that the AI and the CCI questionnaires will be useful in analysis and description of these differences. The hope, of course, is that this information can be added to the readily available background data and in some combination can be used to select students on a more efficient basis.

If the results of this study, which will be available about twelve months from now, live up to the promise shown at this point, the replication, or some variation of a replica, at other institutions would be quite feasible. Our experience has been that, with administrative cooperation, complete background data can be gathered on 1000 students in one week's work by one investigator and one clerical assistant. From our preliminary testing experience we have found that students respond well to the questionnaires which require about 45 minutes each for completion. By working through their class officers we have had splendid student cooperation since the items in the questionnaires pertain directly to their everyday experiences, and most everyone likes to talk about himself when he has an interested audience.

We hope that by an analysis of our results we can come to some better understanding of a few aspects of the behavior of one of the most fascinating of organisms, the American college woman, Southern variety.

Attachment: College Characteristics Index

The College Characteristics Index (CCI) consists of 300 statements of activities, policies, procedures, attitudes and impressions, which might be characteristic of a college. For each question the person answers "True" if he believes it is generally true for his college, is the way people tend to feel and act, or is something which might occur at the college; and he answers "False" if he believes that the statement is not generally true of his college, is not the way people tend to act or feel, and is not something which might occur on the campus of his school.

There are thirty independent subscales of ten items each included in the questionnaire. Each CCI scale corresponds directly to a scale in the Activities Index, developed by George G. Stern out of Murray's classification of psychogenic needs. The Activities Index investigates the needs which characterize an individual; the College Characteristics Index investigates and describes the aspects of the college environment which would tend to satisfy, support, reward, or reinforce an individual who was characterized by the need in question.

For each subscale of the CCI an individual may obtain a score from 1-10. A high score would indicate that there was high press for that particular need in the college environment and a low score would indicate that there was low press in the college environment for that particular need.

The following is a listing of the 30 subscales of the CCI, their definitions according to the Stern Activities Index, and four examples of questions found in the CCI that pertain to the particular press in question. In every case, the definitions are directly quoted from the Preliminary Manual of the Activities Index and College Characteristics Index of George Stern, and the examples from the CCI booklet. After each example a "True" or "False" is indicated which shows how the question should have been answered if the individual saw the college as having high press for that variable.

Definitions and Examples of Subscales

1. Aba-ABASEMENT - "Self depreciation and devaluation; acknowledgment of mistakes, failures, humiliation."

ex. Students are encouraged to criticize administrative policies and teaching practices. (F)
ex. Students are seldom kept waiting when they have appointments with faculty members. (F)
ex. No one is expected to suffer in silence if some regulation creates a personal hardship. (F)

2. Ach - ACHIEVEMENT - "Surmounting obstacles (physical, personal or interpersonal), and proving personal worth."

ex. The competition for grades is intense. (T)
ex. Most courses require intensive study and preparation out of class. (T)
ex. Learning what is in the book is enough to pass most courses. (F)
ex. Students who work hard for high grades are likely to be regarded as odd. (F)

3. Ada - ADAPTIVENESS - vs. Dfd - DEFENDANCE - "Acceptance of advice and criticism vs. concealment or justification of failure or humiliation."

ex. Student organizations are closely supervised to guard against mistakes. (T)
ex. Students learn quickly what is done and not done on this campus. (T)
ex. Students have little or no privacy. (T)
ex. In most classes every student can be expected to be called on to recite. (T)

4. Aff - AFFILIATION - "Close, friendly, reciprocal associations with others."

ex. There are no fraternities or sororities. (F)
ex. There is a lot of group spirit. (T)
ex. There are many opportunities for students to get together in extracurricular activities. (T)
ex. The school helps everyone get acquainted. (T)

5. Agg - AGGRESSION vs. Bla - BLAMAVOIDANCE - "Overt or covert hostility towards vs. denial of such impulses."

ex. Most students show a good deal of caution and self-control in their behavior. (F)
ex. The faculty and administration are often joked about or criticized in student conversation. (T)
ex. Students occasionally plot some sort of escapade or rebellion. (T)
ex. When students dislike a faculty member they make it obvious to him. (T)

6. Cha - CHANGE vs. Sam - SAMENESS - "Unroutinized, changeable behavior vs. repetitive, perseverative action."

ex. Courses, exams, and readings are frequently changed. (T)
ex. There are a lot of students from widely geographic regions. (T)
ex. Everyone here has pretty much the same attitudes, opinions and beliefs. (F)
ex. Most students dress and act pretty much alike. (F)

7. Cnj - CONJUNCTIVITY vs. Dsj - DISJUNCTIVITY - "Organization of cognitive activities vs. uncoordinated diffuse or non-conforming behavior."

ex. Most courses are well organized and progress systematically from week to week. (T)
ex. Instructors explain the goals and purposes of their courses. (T)
ex. Activities in most student organizations are carefully and clearly planned. (T)
ex. It is hard to prepare for an exam because students seldom know what is expected of them. (F)

8. Ctr - COUNTERACTION - "Restriving in order to overcome experienced frustration, failure or humiliation."

ex. Professors often try to provoke arguments in class, the livelier the better. (T)
ex. When students do not like an administrative decision they really work to get it changed. (T)
ex. People here really play to win, not just for the fun of the game. (T)
ex. Channels for expressing students' complaints are readily accessible. (T)

9. Dfr - DEFERENCE - "Sycophantic submission to the opinions and preferences of others perceived as superior."

ex. Students address faculty members as professor or doctor. (T)
ex. Many students try to pattern themselves after people they admire. (T)
ex. Students almost always wait to be called upon before speaking in class. (T)
ex. A controversial speaker always stirs up a lot of student discussion. (T)

10. Dom - DOMINANCE - "Assertive or manipulative control over others."

ex. There is a recognized group of student leaders on this campus. (T)
ex. Student elections generate a lot of intense campaigning and strong feeling. (T)
ex. Students are expected to report any violation of rules. (T)
ex. Personal rivalries are common. (T)

11. E/A - EGO ACHIEVEMENT - "Self-dramatizing, idealistic social action; active or fantasied achievement oriented in terms of personal potency, influence or power."

ex. Students are encouraged to take an active part in social reforms or political programs. (T)
ex. Students are actively concerned with national or international affairs. (T)
ex. The expression of strong personal beliefs or convictions is pretty rare around here. (F)
ex. Student pep rallies, parades, dances, or demonstrations occur very rarely. (F)

12. Emo - EMOTIONALITY vs. Plc - PLACIDITY - "Intensive active emotional expression vs. calm, serene, restrained responsiveness.

ex. Most students get extremely tense during examination time. (T)
ex. The way people feel around here is always pretty evident. (T)
ex. There is a lot of excitement and restlessness before holidays. (T)
ex. Graduation is a pretty matter-of-fact, unemotional event. (F)

13. Eny - ENERGY vs. Pas - PASSIVITY - "Intense, sustained vigorous effort vs. sluggish inertia."

ex. Discussions get quite heated with a lot of display of feeling. (T)
ex. Students put a lot of energy into everything they do. (T)
ex. Few students here would ever work or play to the point of exhaustion. (F)
ex. There are so many things to do here that students are busy all the time. (T)

14. Exh - EXHIBITION - "Self-display and attention seeking."

ex. There is a lot of interest in student theatrical groups. (T)
ex. There are a good many colorful and controversial figures on the faculty. (T)
ex. The college tries to avoid publicity and advertising. (F)
ex. Student parties are colorful and lively. (T)

15. F/A - FANTASIED ACHIEVEMENT - "Daydreams of success in achieving extraordinary personal recognition; narcissistic aspirations for personal distinction and power."

ex. Many famous people are brought to the campus for lectures, concerts, etc. (T)
ex. Students spend a lot of time planning their careers. (T)
ex. Most students are more interested in the present than the future. (T)
ex. Education here tends to make students more practical and realistic. (F)

16. Har - HARMAVOIDANCE - "Avoidance, withdrawal or protection from situations which might result in physical pain, injury, illness, or death."

ex. Initiations and class rivalries sometimes get a little rough. (F)
ex. Fire drills are held in student dormitories and residences. (T)
ex. Students rarely get drunk and disorderly. (T)
ex. Few students bother with rubbers, hats, etc., as precaution against the rain. (F)

17. Hum - HUMANISM - "The manipulation of external social objects or artifacts through empirical analysis, reflection and discussion."

ex. Many of the social science professors are actively engaged in research. (T)
ex. The school offers many opportunities for students to understand and criticize important works of art, music, drama. (T)
ex. A lecture by an outstanding literary critic would be poorly attended. (F)
ex. Humanity courses are often elected by students majoring in other fields. (T)

18. Imp - IMPULSION vs. Del - DELIBERATION - "Impulsive, spontaneous, impetuous, unreflected behavior vs. careful, cautious, considered, deliberate behavior."

ex. In most classes there is very little joking and laughing. (F)
ex. New fads and crazes are continually springing up among the students. (T)
ex. Dormitory raids, water fights and other student pranks would be unheard of here. (F)
ex. There are several popular places where always a crowd can be found. (T)

19. Nar - NARCISSISM - "Preoccupation with self."

ex. Receptions, teas, or formal dances are seldom held here. (F)
ex. Students take a great deal of pride in their personal appearance. (T)
ex. Poise and sophistication are highly respected by both students and faculty. (T)
ex. Students who are not properly groomed are likely to have it called to their attention. (T)

20. Nur - NURTURANCE - "Supporting others by providing love, assistance, and protection."

ex. Many upperclassmen play an active role in helping new students adjust to campus life. (T)
ex. There is a great deal of borrowing and sharing among the students. (T)
ex. This school has a reputation for being very friendly. (T)
ex. Students often run errands or do other personal services for the faculty. (T)

21. Obj - OBJECTIVITY vs. Pro - PROJECTIVITY - "Rejection of superstition, magical, autistic, egocentric perceptions and beliefs."

ex. No one needs to be afraid of expressing extreme or unpopular viewpoints at this school. (T)
ex. The values most stressed here are open-mindedness and objectivity. (T)
ex. Most faculty members are liberal in interpreting regulations and treat violations with understanding and tolerance. (T)
ex. The school administration has little tolerance for student complaints and protests. (F)

22. Ord - ORDER - "Organization of the immediate physical environment; preoccupation with neatness, order, arrangement and meticulous detail."

ex. In many classes students have assigned seats. (T)
ex. Students must have written excuses for absence from class. (T)
ex. Students' papers and reports must be neat. (T)
ex. Professors usually take attendance in class. (T)

23. Ply - PLAY - "Pursuit of amusement and entertainment."

ex. The big college events draw a lot of student enthusiasm and support. (T)
ex. There are a lot of dances, parties and social activities. (T)
ex. There is very little studying over the week-end. (T)
ex. New jokes and gags get around the campus fast. (T)

24. Pra - PRAGMATISM - "Practical concrete achievement; adaptation to reality 'as given' and the manipulation of external objects (physical or social) for more or less immediate tangible ends."

ex. It is important socially here to be in the right club or group. (T)
ex. Students are more interested in specialization than in general liberal education. (T)
ex. The academic atmosphere is practical, emphasizing efficiency and usefulness. (T)
ex. Education for leadership is strongly emphasized. (F)

25. Ref - REFLECTIVENESS - "Intraceptive activities: Introspective preoccupation with private psychological, spiritual esthetic or metaphysical experience."

ex. There would be a capacity audience for a lecture by an outstanding philosopher or theologian. (T)
ex. There are many facilities and opportunities for individual creative activity. (T)
ex. Special museums or collections are important possessions of the college. (T)
ex. Tutorial or honors programs are available for qualified students. (T)

26. Sci - SCIENTISM - "The manipulation of external physical objects through empirical analysis, reflection, and discussion."

ex. The library is exceptionally well equipped with journals, periodicals and books in the natural sciences. (T)
ex. Course offerings and faculty in the natural sciences are outstanding. (T)
ex. Laboratory facilities in the natural sciences are outstanding. (T)
ex. A student who spends his time in a science lab is likely to be regarded as a little odd. (F)

27. Sen - SENTIENCE - "Sensuous or voluptuous self-gratification."

ex. On nice days classes meet outdoors. (T)
ex. This is mainly a meat and potatoes community with little interest in anything unusual. (F)
ex. There is a lot of interest in poetry, music, painting, architecture. (T)
ex. Concerts and art exhibits always draw big crowds of people. (T)

28. Sex - SEX vs. Pru - PRUDERY - "Erotic interest or expression vs. the denial of such impulses."

ex. There is a lot of informal dating during the week, at the library, snack bar, movies, etc. (T)
ex. Student gathering places are typically active and noisy. (T)
ex. Most students here really enjoy dancing. (T)
ex. Students spend a lot of time talking about their boyfriends or girlfriends. (T)

29. Suc - SUCCORANCE vs. Aut - AUTONOMY - "Dependence on others for love, assistance, and protection vs. detachment, independence, and rebellion."

ex. Students often help one another with their lessons. (T)
ex. The person who is trying to "help out" is likely to be regarded as a nuisance. (F)
ex. Students here are encouraged to be independent and individualistic. (F)
ex. Most of the faculty are not interested in the student's personal problems. (F)

30. Und - UNDERSTANDING - "Detached intellectualization: problem solving, analysis, or abstraction as an end in itself."

ex. There is a lot of emphasis on preparing for graduate work. (T)
ex. This school is outstanding for the emphasis and support it gives to pure scholarship and basic research. (T)
ex. Most professors are dedicated in their fields. (T)

ADMISSIONS RESEARCH AT TULANE UNIVERSITY

Cliff W. Wing, Jr.
Tulane University

The admissions problems that occur in selecting students who best fit the educational objectives and resources of an educational institution have not all been solved, nor perhaps are they solvable unless we believe our friends, the chemists, who tell us that all problems are soluble in alcohol. The problems involved in the task of making admissions decisions vary considerably from student to student, from program to program, from institution to institution, and from year to year. While there may be doubts cast on the solubility of these problems, I am sure that there can be little argument of weight offered against the proposition that these problems are researchable. A knowledge of research methods and findings concerning admissions functions and related disciplinary areas, such as psychology, sociology, and education, can be of considerable assistance to the practicing admissions officer in making the evaluations required in the selection process. It is even conceivable that research evidence would be of help in explaining the reasons why it was necessary to reject an influential alumnus's son.

If research is to be used to assist the institutional admissions officer to select a successful class of students, certain tasks must be performed. Perhaps the first and most basic task is to define what success constitutes, or to put it another way, to define the institution's educational policy explicitly so that it can be used to direct the types of measures utilized in the selection process. The institution's policy might set the goal simply as that of selecting those applicants most highly qualified to make good grades to a maximum number consistent with available facilities. But frequently today the task is by no means so simple. Institutional policy may set all the following as measures of the successful class: It should contain only students qualified to obtain the degree being sought; as many members of the class as possible should graduate with honors; students should be compatible with each other, yet diverse sub-culture should be represented to provide stimulation and breadth; there should be a balance of leaders and followers in the extra-curricular, co-curricular, and curricular activities provided on the campus. Characteristics other than these might be substituted or added to the list, depending upon the institution. In any event, all these may be criteria of success in an institution, and the first job of those responsible for admitting a class must be to specify which criteria apply to the institution and in what quantity each characteristic is to be represented in the class.

The second task in admissions work is to develop procedures and measurements that will predict accurately -- with validity and reliability -- each of the characteristics desired. What test scores, what high school extra-curricular patterns, what geographic representation will yield the desired outcome? For each characteristic ultimately desired, there must be found a measure that can be made at the time the applicants apply which will be reflected in performance during the years when the class is attending the institution. These problems of predicting the various kinds of success from the credentials presented at the time of application certainly have been studied, though near-perfect prediction for all types of success is by no means possible today.

Another task which has received little attention in admissions work is that of deciding how to put together the various different measures, such as predicted grade-point average, leadership qualities, and geographic representation, into the most successful composite class. How does one go about the job of putting together this measure of academic ability, that measure of cultural background, and the other measures of leadership, athletic ability, or whatever, to achieve the most successful composite class? While there may be few examples of answers to these questions, I believe that there will be an increasing number of attempts to find best solutions to such problems in the near future, as this type of question is being asked with increased frequency by admissions officers.

In the past and presently, research in admissions has been largely concerned with the prediction of college grades with the use of test information and high school grade reports. Many institutions report that they predict seven out of ten freshman grade-point averages within a reasonable degree of error. With the recent increased opportunities for selection in the admissions process, many institutions have developed formulas for predicting grades of their students. There is, however, by no means sufficient conformity in these formulas to permit the use of any one of them across the board or willy-nilly as a means of predicting grades in the variety of educational institutions existing in this country. Each admissions officer must work toward obtaining the specific class characteristics that best fit the circumstances of his own institution.

As an example of some of the types of study performed in an admissions office, I would like to talk about some of the results of the work that we have been doing at Tulane -- not that this work is any shining example of what ought to be done. I merely find it easier to talk about this work because it is familiar to me; and I hope that some of our problems are general enough to make these results interesting to more than a few.

For some time, we have been interested in whether or not the cultural background to which a student has been exposed affects his grade performance at Tulane. Several years ago we began a series of studies in which we classified each student in the freshman class according to the occupation of his father. We used three classifications: (1) upper-class -- students whose fathers worked in the professions or high salaried executive positions, (2) middle-class -- students whose fathers worked in managerial, clerical or sales capacities, or were owners of small businesses, and (3) working-class -- students whose fathers worked in semi-skilled, unskilled, or technical capacities with little formal education needed. When we statistically controlled for differences in College Board scores and high school performance, we found that there were small but consistent errors in our prediction. For example, we consistently under-predicted for the upper-class group and consistently over-predicted for the lower-class group. In other words, the lower-class boys were making poorer grades than what we were expecting and the upper-class boys were making better grades than what we were expecting. While the results of this study were consistent and statistically significant, there was not enough difference for us to gain much by using this factor in prediction as a part of standard procedure.

Later, we duplicated the study, using women instead of men, and this time we found that there were no consistent differences among the students from different backgrounds. Kinsey also found that women were different from men, so we went on to our next set of studies.

We classified male students according to the size of the communities in which they had lived before coming to Tulane. We used three classifications: (1) large cities, having more than 100,000 in population, (2) small-sized communities ranging from 5,000 to 99,000 in population, and (3) rural places that had under 5,000 in population. The results were similar to those for the occupational background of the father. There were small but consistent differences indicating that we were over-predicting for the rural boys (they did not perform as well as expected), and we were under-predicting for the urban boys (they did better than expected). These differences were again judged not to be of practical significance.

We reproduced this urban-rural study for a group of girls and there were no differences in the data. This time we concluded what everyone knows -- women are just not sensitive to their cultural backgrounds.

Our third set of studies on the cultural background of the student concerns the type of secondary school the student attended before coming to

Tulane. These studies are not completed yet, but we have in hand enough preliminary data to lead me to believe that we will obtain results that will entail substantial changes in our current admissions procedures.

We classified entering freshmen according to four different types of school background. Type 1 schools had selective admissions standards, were exclusively college preparatory, and the average aptitude test scores for seniors ran well over the national average. The performance of students from these schools in the past at Tulane was usually the same or slightly better than what it had been in the secondary school. Type 2 schools were mostly public schools located in suburban areas or middle-sized cities. They were predominantly preparatory schools and the performance of their students usually was only slightly inferior at Tulane to what it had been in school. The third type of school was the large metropolitan high school where about half the class went on to college, and at Tulane the students usually did not make as good grades as they had in school. The fourth type of school was located in towns of under 25,000, the percentage of graduates going on to college was less than 50 per cent, and the usual student did not do as well at Tulane as he had in school.

Controlling for differences in College Board scores and high school performance, we find that there are substantial differences in the students' performance at Tulane. We also find that there are substantial differences in the formulas used to project the performance at Tulane for these various groups. For example, we find that for the Type 1 school, the College Board scores are of little use in the prediction of college grades, while in the Type 3 school, the College Board scores are of considerable importance.

We find that the poorer students from the Type 1 school, we have been under-predicting their performance at Tulane (they do better than expected), but for the good students from the same schools we have been over-predicting their performance (they do not do as well as expected). For the Type 3 school we find the reverse of this. The poorer students do not do as well as expected but the good students do better than expected.

We have taken a 20 per cent sample of this year's freshman class and have made predictions for them on the basis of this information. We are finding that we not only can predict better by using this information, but also that we can decrease the amount of expected error in our predictions.

In summary, knowledge of the differences in applicants' school background is helpful in improving our predictions of grade success in college. These differences are complex, and we therefore must develop different formulas depending on the type of secondary school a student has attended. We do not expect the formula under development at Tulane to be applicable to prediction of performance at all educational institutions. The methods used to improve prediction, however, -- that is, research concerning cultural background factors -- are applicable anywhere. If the data collected by admissions officers is used to facilitate research studies in the admissions area, we have great opportunities to assist in the betterment of selection and counselling of the college student and also to contribute to a better understanding of the educational process within and among our diverse institutional settings. May I urge you to contribute.

PART 3

APPROACHES TO INTER-INSTITUTIONAL COOPERATION IN ADMISSIONS RESEARCH

Presented by

J. A. Davis
Educational Testing Service

John R. Hills, Director
Office of Testing and Guidance
Regents of the University System of Georgia

A PREDICTION PROGRAM IN A UNIVERSITY SYSTEM

John R. Hills
Regents of the University System of Georgia

Before I try to describe a prediction program in a University System, I should explain to you what I mean by "University System." In the state of Georgia all tax-supported higher education is administered by a single group of men. The group of tax-supported colleges is called the University System of Georgia; the men who administer the University System are the Board of Regents. The Board of Regents are 15 eminent Georgians appointed by the Governor for terms of seven years. Their function is to represent the interests of the people of Georgia in their tax-supported system of higher education. They have complete control and authority to take whatever action is necessary in administering the System except for the fact that they must obtain the money for the System from the State Treasury. In the University System there are 19 separate institutions, including a medical college, a technical institute, a university, a woman's college, several four-year colleges, a number of junior colleges, and three colleges which are primarily attended by Negroes.

The System has existed as a coordinated organization for several decades. However, for a good part of its existence one of the problems was finding a sufficient number of students to come to college in order to fill the available dormitory space and keep the colleges operating efficiently. Recently, this tendency has reversed itself until now a major problem faced by the University System is a lack of sufficient facilities, staff, space, and money to take care of all the students who want to come to University System colleges. That this would be the case was clearly foreseen several years before the problem became acute. Knowing that sufficient funds and facilities would not be available to provide for all who might wish to attend public colleges, the Board of Regents decided that some objective and sound procedure was needed for deciding who would be admitted and who would be turned away. This was one of the major factors in the establishment of the Board of Regents' Office of Testing and Guidance in 1956. The central purpose of the Office of Testing and Guidance at that time was to develop the procedures and relationships necessary for effecting a System-wide requirement that all students who wish to attend University System colleges must present scores on the College Entrance Examination Board's Scholastic Aptitude Test. In 1956, the Board of Regents adopted that policy and the first task of the Office of Testing and Guidance was to help the citizens of Georgia, especially the public school people, understand the purpose for, the reasoning behind, and the value of such a policy. It set out to find what value the College Board tests would have for selection purposes in the System and how they might be used most efficiently. That was the beginning of the prediction program in the University System of Georgia, and the first research of this sort was conducted by Dr. J. A. Davis who will speak to you a little later this morning.

One of the aspects of the University System's program, which I was asked to emphasize, was the method used to obtain cooperation to institute a statewide or a System-wide prediction program. I would say that from my experience, one of the most essential features of obtaining such cooperation is having a man such as Dr. Joseph Moore, of the Georgia Institute of Technology, to spend a year in working with all the people of the state, helping them to understand and to learn to trust the proposed program. Doctor Moore made hundreds of visits and scores of talks in communities of all sizes in Georgia during the first year of the program, alleviating people's fears, increasing their understanding, and gaining their acceptance.

A second method of gaining cooperation, particularly of institutions which may not be closely tied to a System, is to offer a service in return for participation. Thus, the Office of Testing and Guidance of the Board of Regents has done some research of one kind or another for all but one of the 50 different colleges in the state of Georgia. I believe that through this approach we have become colleagues and associates rather than competitors.

A third area in which cooperation is, of course, necessary, is within the System itself. I believe the fact that the Office of Testing and Guidance is assigned to more than the task of developing a prediction program in the University System of Georgia has helped our work be accepted. We conduct many activities under the heading of guidance, as well as those under the heading of testing. In fact, a year ago, we appointed an Associate Director of Testing and Guidance for the University System whose primary training and primary functions are in the guidance area. We conduct conferences of various kinds each year which bring the System's guidance people, admissions people, or testing people, together so that they may share their experiences and problems, and cooperatively, work out solutions. We also conduct a testing and guidance employment office for the University System, to help people in the System find greater opportunities than they now have and to help colleges find better qualified people for positions they have open. A considerable amount of time is spent in helping new testing and guidance programs get started in colleges which have not had them before. Other research is offered, such as the evaluation of counseling and student personnel programs in colleges which want to evaluate what they are doing. We conduct surveys of various kinds, both for the institutions and for the Regents, and we have been asked to participate actively in a new Regents' State Scholarship program, advising and coordinating efforts along these lines. Finally, we attempt to make the transition between high school and college easier for all concerned by developing suitable guidance materials for use at the high school level. All of these activities, I believe, stimulate cooperation throughout the state.

Several times I have referred to the prediction program that I am supposed to be talking about. Now I'd better tell you what it is. As you recall, I stated earlier that in 1956 the Board of Regents adopted the requirement that all persons who entered the University System as freshmen must take the College Board's Scholastic Aptitude Test and submit the scores to the institution of their choice. It has always been the policy for students entering our colleges to submit transcripts of their high school records. From these transcripts every college registrar computes for each applicant his average grade in academic courses for his high school career. We use this average, along with the College Board Verbal score and the College Board Math score to make predictions of students' grades in college.

The way we do this is to collect the test scores and high school grades and then wait until students have grades from part of their college careers. At first, we studied the prediction of first quarter grades. So, for the class entering in 1957, when the students had finished their first quarter we did a statistical analysis to determine how well we could predict grades by using the SAT scores and high school average. When this group had finished its first year in college, we again analyzed the data to evaluate our ability to predict first year grades, and after the sophomore year had been completed, we studied the prediction of sophomore grades or cumulative grades for both years. The group which entered in 1957 has finished its junior and senior years now, and we are currently studying the predictability of junior year grades, senior year grades, and graduation average. In other words, in all the undergraduate units of the University System we are following the entering class of 1957 through its entire four years of college-level work. In the case of our junior colleges, we follow them through two years. We are also following some of the students who do not finish in the usual amount of time to see what kinds of students they are and how long it takes them to finish the course in which they entered.

Some of you may not be very familiar with how grade-average predictions are made and what this kind of prediction is. If you take any one variable or set of scores such as the College Board Verbal (SAT-V) score and compare scores on that variable with grades, you will ordinarily find that those who had the highest SAT-V scores will tend to get the highest grades, and those who had the lowest SAT-V scores will get the lowest grades. This relationship is not perfect, but it is usually very clear that there is some relationship between these two sets of numbers. By plotting these sets of numbers in two-dimensional space with grades on the vertical axis and SAT-V scores on the horizontal axis, you will ordinarily get an oblong scatter-plot concentration with the points in the two-dimensional space running from the upper right hand corner to the lower left hand corner. People who are high on both variables will be located in the upper right hand corner, and people who are low on both variables will be in the lower left hand corner. A straight line may be drawn through the middle of this cluster of points and treated as though it represented all of the people. If the relationship between the two sets of scores were perfect, this line would tell you exactly what grades go with various levels of SAT-V scores.

Now from analytic geometry we could determine a formula for that straight line. Then, instead of using a two-dimensional plot for predictions, we could merely "plug" a student's Verbal score into a formula and obtain his predicted college grade, or a machine could do this for us. The formula for that straight line would be a prediction formula. Our formulas are a little more complicated than this because we have three predictors instead of one. Our predictions take into account the fact that the person whose College Board Verbal score is highest will ordinarily have a higher College Board Mathematics score and a higher high school average than someone with a low College Board

Verbal score. Through a routine, but somewhat more complicated, data analysis, we can determine a prediction equation for three predictors of just the same sort that we had for one predictor. The three-predictor equation takes into account the inter-relationships among the three predictors. The formula that you then obtain might look something like this:

$$[illegible]2\ V + .0018\ M + .0329\ HSA - .6235 = PFAG$$

This formu [illegible] be the formula developed for students who entered Georgia Tech [illegible] stands for Predicted First-Year Average Grade, V stands for College Board Verbal score, M stands for College Board Mathematics score, and HSA stands for high school average. In this case, HSA is computed by allowing 40 points for an A, 30 points for a B, 20 points for a C, 10 points for a D, and 0 points for an F.

Basically then, the prediction program in the University System of Georgia amounts to gathering the data, and computing the formulas and other statistics which indicate the level of accuracy of prediction, etc., for every college in the University System.

Now we add a few extra features to this basic concept of prediction in order to make the data more useful to us. First of all, we compute separate prediction equations in every institution for men and women. It appears that one different equation must be used for men and women, respectively, if one wants to be as accurate as possible. We introduce some other features also. At institutions such as Georgia Institute of Technology, the University of Georgia, and Georgia State College of Business Administration, students, upon entry, must indicate the school or college within the institution they wish to enter. Thus, at the University of Georgia, one has to choose between the School of Education, the College of Arts and Sciences, the School of Forestry, the School of Agriculture, the School of Journalism, etc. For these institutions we have done additional analyses, again treating the two sexes separately, to develop equations to predict first-year average grades within those particular fields. The formulas are a little different from those obtained by just throwing everybody into one hopper as University of Georgia freshmen. The mathematics variable might receive more weight in agriculture than it does in journalism, or the HSA might receive more weight in home economics than it does in some other field, etc.

Some of our junior colleges have what they call terminal courses. These are programs of training for one or two years in such courses as secretarial science, farm mechanics, etc. In many cases, we work out separate equations for terminal students in various course areas at these institutions.

All these prediction equations are very useful to our college admissions officers and registrars. They permit statistical predictions with a fair degree of accuracy of how well a student will perform in college from data available prior to entry. From these predictions they can identify the students for whom probability of "success" is low. Thus, if they must reject students due to lack of facilities, staff and finances, they can do so with the knowledge that those "rejected" had lower probability of success than admitted students. However, it is very useful for high school counselors to have similar data and similar statistical techniques in order to give good advice to students about attending college. We have found that it is not difficult to modify our formulas for use by high school counselors in making predictions and estimates.

However, the high school counselor is not dealing with those students who are going to University System college only. There are about 30 private colleges in Georgia. If we want to promote sound advisement about college for high school students, we need to have prediction data for private colleges. In 1959 we decided to obtain the same kind of data for private colleges that we had for our public colleges, and to make all these data available to high school counselors. The first group of private colleges with whom we worked were those requiring the College Board tests. Their data were very similar to the public college data. There are a number of private junior colleges in Georgia which do not require the College Board test. A few four-year institutions also do not require the SAT. For those institutions we could still provide useful data for counselors by making our predictions on the basis of only the high school average which is available for practically every student in the state. So, after developing prediction materials based on College Board scores and high school records for all the public and private colleges in the state which required College Boards, we went ahead and developed prediction materials based only on the high school average for all the rest of the colleges in Georgia. At present, every high school counselor in Georgia has been sent material from which he can make statistically sound estimates of grade average criteria of college "success" for students with respect to every Georgia college with the exception of one small college which could not gather the high school data. Thus, a prediction program in the University System grows into a prediction program for an entire state.

You might be interested in just a few of our findings. As noted earlier, we have found (as have others before us) that males and females seem to be different! Along with our College Board testing, many of our colleges have begun to give their students achievement tests in various fields at the time they enter college, at the end of their sophomore year, and, in some cases, at the end of their senior year. This has provided some useful data, the salient findings of which seem to be that though boys do as well as girls on most achievement tests, and do about as well as girls on aptitude tests, the girls get higher grades both in high school and in college, and girls are slightly more predictable. Our average multiple correlation is running in the .60 to .70 range.

We have tried using achievement test scores as additional predictors to see if we could improve our prediction by adding more tests. In general, this has proved to be unsatisfactory. The accuracy of prediction is increased very little by adding additional predictors. We have found a rather high relationship between our predictions of success and the tendency for students to withdraw from college. For instance, at one institution, for students predicted to obtain grades of C or above, only two per cent withdrew during the first year for scholastic deficiency, while for those predicted to obtain grades below C, 36 per cent withdrew.

We seem to find some noticeable differences among colleges. In some colleges, for male students, both the Verabl and the Mathematics scores of the College Board are useful predictors, while in other colleges only the Verbal score seems to contribute. In still others, only the Math score seems to contribute. For women, our experience is that while some colleges require both the Verbal and Math scores to get most accurate predictions, other colleges can obtain the same level of accuracy whether they use the Verbal score alone or a combination of Verbal and Mathematics. In our experience so far, no group of women has been as predictable on the basis of the Mathematics score and the high school average as they were on the basis of the Verbal score and the high school average. Thus, for women the Math score may be systematically less important as a predictor than the Verbal score in the University System of Georgia.

We have found that for Negro students the SAT seems to be much less effective than for white students. The average scores on the SAT for Negro students are much lower in our System than they are for white students, on the order of about 150 points lower. This may account for the fact that the SAT scores for Negroes are not as useful as predictors. We have found that other aptitude and achievement tests, in a few instances, seem to do markedly good jobs of making predictions for Negro students. For example, at one Negro college the prediction accuracy for the SCAT Total score combined with the STEP Writing score was higher than the accuracy of prediction from using a combination of College Board Verbal, College Board Math score, and high school average. There is still much to be explored in this area.

I should like to take just a moment to talk about how all this work is coordinated within the University System. It started out being done primarily in the Office of Testing and Guidance. As the colleges individually found that the data obtained in this manner were very useful, in fact, almost indispensable, some of them began to hire staffs of their own to conduct the same or additional analyses on their own students. As this takes place, the central office will not duplicate the work of the individual colleges, but will expend its energy in conducting research which is System-wide or statewide. The central office will tend to serve as a research staff for the Board of Regents, explore new approaches, serve as consultants, and assist in developing programs in the individual institutions.

COOPERATIVE COLLEGE ADMISSIONS RESEARCH IN THE NORTH CAROLINA COLLEGE CONFERENCE*

Junius A. Davis
Educational Testing Service

There are a number of happy instances in the management of institutions of higher education where common interests of a number of institutions may meld with the fact that joint investigation promises the most useful results. These are situations where findings are likely to reveal a range of differences among institutions, and thus make useful the comparison of known institutions on the new characteristics studies, and where findings can be boiled down to a parsimonious, consistent, objective set of relatively few indices. For example, one might determine the number of students at one institution who go on to graduate study. The figure of 10 per cent, say, acquired significant additional meaning when compared with other known schools. The efforts reported in this paper are potentially significant in that they represent a problem immanently adapted to this type of investigation, yet deal with an area where fear of invidious comparison may prevent the work from being initiated; they are also significant because of the capitalization on the varied talents and facilities of a number of institutions in getting a job done efficiently and effectively.

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*Parts of this paper are adapted from the 1960 report by the writer of the Admissions Research Subcommittee of the North Carolina College Conference, published in Proceedings, Fortieth Meeting of the North Carolina College Conference, pp. 48-53.

The North Carolina College Conference is the professional, state organization of colleges of the state; this is the usual sort of organization with member institutions and delegate representatives, holding a standards and accrediting function as well as sponsoring, through an annual meeting and the work over the year of various committees, general informative or inspirational activities of which "the dominant purpose . . . shall be to further the cause of higher education in North Carolina." Standing committees are maintained on standards, college admissions, student relationships, collaboration with the State Department of Public Instruction, necrology, publicity, and cooperative research. The last named committee, that on cooperative research, is one of the most active as well as diffuse, probably because each member institution may appoint a representative to the committee, and because a primary annual activity has been an inventory of local research on the various campuses which may be of general interest to college administrators. The committee also searches for researchable problems and occasionally delegates subcommittees to inventory a particular kind of data over the range of institutions. Because representatives on the committee are generally administrators rather than researchers, the studies have generally been of a questionnaire and tally variety.

Although few colleges (and particularly few of those really active in the Conference) have had more applicants than places and are thus particularly selective, the Conference had seen introduction of the requirement in 1958 for the College Entrance Examination Board tests for applicants to the Consolidated University of North Carolina -- following use of this practice for a number of years by prestige institutions like Duke and Davidson -- followed by a request from the State Board of Higher Education in 1960 that all applicants for public colleges take the CEEB Scholastic Aptitude Tests at state expense. The "new" (for this group) admissions tests and implied coming selection, yet the dearth of information or skill in knowing how to deal with the test scores and the host of fears concerning misuse, over-mechanization, etc., made research on testing seem like a useful activity for the committee. As the mechanics required by the problem seemed beyond the regular personnel, and as some of the institutions had research psychologists or statisticians already at work, a subcommittee on admissions research was formed, with members representing psychology, admissions, and administrative personnel. The admissions people had the problem, the administrators related pressures ranging from budget difficulties to faculty outcries about poorly prepared students, and the psychologists, somehow with the good sense not to be opinionated as to outcomes, the techniques for organizing the information in useful ways. The usual problem in comparative studies involving test data, that of producing a hierarchy of institutions, was not immediately foreseen, apparently due to the generally innocuous or at least non-threatening nature of activities in the past, and the close family nature of the actively participating institutions.

It is probably important, too, to note that this "never-never land" for research which might produce threatening findings for some institutions had several other factors in its favor. First, the precedents set by the University System of Georgia in publishing (initially under Regent's authority) such information in non-threatening ways that private colleges willingly joined the pool, and the agreement of member institutions of the College Board to publish a College Characteristics Handbook describing admitted classes, took some of the sting out of the fears: Harvard remained Harvard, and South Georgia College remained steady and strong in Coffee County. Second, the appointment of professional research persons aware of these problems but with pressing interests to surmount them undoubtedly kept fears at a minimum.

From this point, it would perhaps be most helpful to describe the first year's work of the Committee.

In April of 1960, the Subcommittee on Admissions Research of the Cooperative Research Committee met in Raleigh with several members of the Cooperative Research Committee. The representatives of the Cooperative Research Committee charged the Subcommittee with the task of determining what research might show as to the value of tests (and specifically, the College Entrance Examination Board Scholastic Aptitude Test) in selective admissions in those institutions in North Carolina utilizing this tool. The Committee was asked to conduct such research as prudent, or to collect this information if it be already readily available, and to report the general findings to the North Carolina College Conference.

The Subcommittee, after noting the nature of the general findings over the country, and after consultation with research personnel concerned with similar projects for several institutions, drew up a general plan for intensive study of the College Board tests in terms of their effectiveness for predicting academic survival of applicants in colleges represented on the Committee.

In formulating the plan, the Committee took note that the ability of carefully constructed tests of intelligence and achievement to predict grades in a variety of colleges is well established over the country. Yet, several important questions were raised immediately. First, how good are the tests for admissions purposes *for particular institutions*, and in North Carolina does the value of the tests or the meanings of particular scores vary from one type of institution to another? Second, what *other* kinds of information available before admission may be useful for admissions, placement, counseling, or other legitimate purposes? Third, how may these several kinds of information be put together for use in admissions, placement, counseling, etc.?

In view of findings elsewhere that high school grades or rank in class generally prove better predictors of college grades than do test scores, it was decided to add to the test research a rating of applicants' performance in secondary school. Thus, the Committee began to go beyond its original charge to study tests. Specifically, the basic research asked this question: how do applicants at selected levels within the range of possible scores on the preadmission indices actually perform in college, on the average? Secondly, for students with a given level of ability, what range of variation in academic performance exists due to other factors -- motivation, study efficiency in college, etc.? Finally, of course, the Committee wanted to explore how these data could be processed without budget, and to develop ways in which masses of statistical or technical data such as these might be made simple and usable for admissions directors or college presidents.

This developed plan called for (1) utilization of technical specialists in measurement and research to provide the design for a joint study and to provide an interpretation of the results, which admissions officials, faculty committees, or the general faculty can understand; (2) utilization of available computer facilities at the University of North Carolina for the rapid treatment of data; (3) confidential treatment of those particular findings which could be misinterpreted by lay persons, particularly where apparent differences among colleges are involved; (4) continuation of the study through several years, so that findings for one year may be tested for agreement of experience of later years; and (5) ultimate publication of findings which might be useful for high school counselors in North Carolina in working with college-bound youth. The latter point, of course, was felt to have a particular meaning in the conviction that students may be more likely to select a college than are colleges to select a student. If the information provided by the research may indeed reveal colleges where applicants with a given pattern or level of scores could be successful, the results should provide not only a valuable source of institutional study but also information of considerable value in selecting (or permitting self-selection of) the kinds of students that do well at a given institution.

In the first year study, each institution is providing a research person on the Committee with a roster of students entering in 1959 which lists their scores on the three preadmissions indices together with the freshman average grade as determined by that institution. This is the raw material for the statistical analysis and is being prepared on IBM cards for treatments by the computer at a budget of about 50 dollars from research funds at one institution.

After the first round of findings, second year research will be planned. This could deal with a number of questions. For example, do relationships between test scores and academic performance hold from one group within an institution to another, or from one year to another; are there differences among high schools in the meaning of a given grade average or in terms of performance in college; are there substantial differences in level among schools or departments within an institution; are there particular placement uses of these preadmission indices?

In such a study, the proof must be in the pudding. It would probably be helpful at this point to give a statement of some of the kinds of findings that preliminary study has provided. At the present time, some data are available for the three institutions in the Consolidated University, for Duke University, Davidson College, and Meredith. Although some of these studies are still fragmentary, the results are typical of many thousands of studies conducted elsewhere over the country. The basic findings may be summarized as follows:

1. Students tend to vary somewhat from institution to institution on the SAT-V or SAT-M scores and in average high school rank. For example, in the Consolidated University, students entering at Woman's College have the highest average rank in class, students entering at Chapel Hill have the highest verbal score, and students entering at North Carolina State College have the highest mathematical score. These, of course, are differences we might expect with regard to the institutional purposes and groups of students studied.

Yet levels of entering freshmen on these indices are not the purpose of the studies. Various institutions with differing goals and purposes may be reasonably expected to have varying standards of performance, varying attrition rates, etc. The Committee was well aware of the fallacy and the danger of attempting a quality judgment of institution on the basis of quality of applicants on indices of yet unknown validity available before admissions. The evolved purpose of the study is not to make pseudo-qualitative rankings of institutions, but to determine the value of the preadmissions indices for intra-institutional purposes.

2. A second finding is that all three preadmissions indices are substantially related to grades in every institution studied, although the degree of relationship varies somewhat from college to college.

It would be interesting, perhaps, to describe some useful ways in which these relationships may be assessed. For example (Table 1), if we take all students at the University of North Carolina who scored exactly 700 on the verbal form of the Scholastic Aptitude Test, we find that this group of students made a first year average (column 2) of 2.9 (where 4.0 equals A, 3.0 equals B, 2.0 equals C, etc.). For that group of students making a score of exactly 400 on the SAT-V, the first year average is 1.7.

Column 3 in Table 1 shows another way of assessing the relationship between test and later academic performance. The "Probability of Satisfactory Grades" column shows the proportion of the group of students with the given SAT-V score who achieved a 2.0 average (required for graduation) or better. By observing the deviation of performance within given score intervals as shown hereon, one may so make a less than perfect relationship useful. We can say that a student with SAT-V score of 700 is most likely to average 2.9, that there are 88 chances in 100 that he will achieve at least a C average; or that about nine of every ten students with this score will achieve a C or better average. Only 18 of every 100 students (or about one out of five) with SAT-V scores of 300 make the same average or better. The pattern of deviation of actual performance from average or predicted performance can be determined. As prediction may become more accurate, this deviation of actual from predicted grade (the"error of estimate") becomes smaller.*

Table 1

First Year Average of Groups of Students at
University of North Carolina With
Various Given SAT-V Scores

1 SAT-V Score	2 First Year Average	3 Probability of Satisfactory Grades
700	2.9	.88
600	2.5	.74
500	2.1	.55
400	1.7	.35
300	1.3	.18

3. The third finding has pertinence to this last point; the prediction does become more accurate when the three preadmissions measures are combined.

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*Such information was given to conference delegates (consisting generally of college presidents and academic deans) in the 1960 report of the sub-committee to the conference. This seemed to provide a powerful motivating effect toward joining in the research, rather than raising fears. The results would surely have been different if SAT averages for Duke, University of North Carolina, and Meredith had been given instead.

Students with SAT-V scores of 500 and with good high school records do better, on the average, than students with poor high school records and SAT-V scores of 500. The multifactor approach provides a smaller error of estimate, or, more accurate assessment of probability of achieving a given grade.

4. As the different preadmissions indices have different relative values for different colleges, each institution requires a unique way of combining these indices to rank students in order of promise or to obtain a maximally accurate prediction of grade. The combined index may also yield the same kind of predicted grade and probability of survival data given for the single index (SAT-V) in Table 1.

5. Simple record-keeping procedures can determine quality of applicants, or rejected vs. accepted applicants, or the proportions of applicants which may be expected to exceed a given standard in a new year.

Thus, the admissions research does provide useful information, if handled correctly, for identifying applicants most likely to succeed at a given institution. A census of applicants may further provide information as to how selective a college may afford to be.

In spite of these facts which the research may provide, the Committee has noted a number of issues remaining which a college must deal with in other ways. For example, the layman believes the tests may identify the qualified applicant. Yet, is the qualified applicant one with a probability of survival of .90, or .40, or .10? One can be sure that even in the enrollment period ahead there will be no surplus of applicants at the .90 level. Someone still needs to decide how much risk the college can afford, or conversely, how many students the college must enroll to maintain faculty and facilities. A few colleges with a long history of selectivity will generally attract applicants with relatively high probability of survival, but most of the member institutions will find as a first impression that many applicants or freshmen they have been entertaining are a distressing lot now that they have the means to evaluate their academic potential through tests. The main point, however, is that budgetary and efficiency needs represent policy decisions that the test research cannot solve in itself.

A second question has to do with institutional goals. A South Carolina admissions director has brazenly suggested publicly on a number of occasions that colleges set maximum as well as minimum test scores for admission, so that the college may focus on those students which fit its modal requirements, excluding those it may not challenge as well as those it may challenge too much. But the question of what kind of college are we, and what kind of college we can become is one answered by work and policy decision, not by instituting a research program. Attracting a particular kind of student is a selective recruitment rather than a measurement and prediction problem.

Other limitations lie in the less than perfect predictions. Any group of excluded students will contain some who would have done well if admitted; any selected group will contain some who will not achieve satisfactorily, or who will create the usual problems for the dean of students.

Too great a focus on test criteria may lead, too, to blindness for other qualities which, though related or unrelated to academic performance, may be essential to the institution. For many of these qualities, no reliable methods of identification and assessment exist. It will become more important than ever for each college to examine its goals and demands, its criteria for achievement and success, and to define its ideal student body.

Too rapid adoption of test criteria may have other implications for a college. It was found, for example, in preliminary studies at one institution that the SAT-V score averages for students grouped by academic major varied as much as 125 points, and that highest academic averages were sometimes obtained by the major group with the lowest SAT average. The point is that adoption of an elevated test score criterion may affect potential majors in one department more than another, forcing change in emphasis in college programs or forcing revision of program so that it may attract new kinds of students.

Nevertheless, the subcommittee has felt that exciting and useful information for the participating colleges will be developed through the cooperative admissions research. Some setback has been suffered in the resignation of the person supervising the collection and machine processing of the data from his college, and a new "systems" man with a couple of weeks time will need to be found. The time will have to be found for the writing of a report when the data emerge from the computer; the success of the project for the colleges or in pervading other areas (viz., data for high school counselors) will undoubtedly depend on the skill but substantially on the enthusiasm and time of one or two individuals, who will have their own duties at home to perform. But with the start thus far, the nature of preliminary findings, the validity of the problem, the many psychologists who have itched to get their hands on such an array of data, and the facility of the Univac 1105 to make three minutes work of a year's activity with a desk calculator, it is most likely that useful results will emerge.

Thus, a significant start on a useful cooperative research. What are its main lessons for us? In summary, may I conjecture that this project has worked thus far because:

1. Available organizations and channels have been utilized;

2. The problems which the research deals with are real, and useful results are emerging;

3. Administrators with real needs have commissioned (but are not conducting) the study;

4. Research specialists have been brought in to handle the technical work, and have, in fact, worked with rather than against the administrators;

5. Budget problems have been bypassed by avoiding the establishment of special personnel and facilities; available "free" facilities have been utilized to a maximum;

6. The tedious work is being handled by modern computer; and

7. The participation level and interest in the project has been kept high by sharing, as the work proceeds, useful findings in non-threatening ways.

APPENDIX A

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Case Study

KINGSTON COLLEGE

Private Four-Year College

Kingston College, founded shortly before the Civil War, is located in the city of Two Rivers, Illinois. Two Rivers, with a population of approximately 75,000, has grown from a background of agricultural and industrial activities. It is the largest city within a radius of 50 miles and continues to serve as the major marketing center for most of its rural inhabitants. The industries found here are of many types, small and large; the growth of new industries has abated in recent years. In the surrounding territory, Two Rivers is noted for its parks and playgrounds, for pleasant residential areas and numerous large homes and estates. Cultural activities, music, art and drama, are scheduled throughout each year and are generally judged to be above average in quality. Quite a number of these events are held on the Kingston campus. The campus is surrounded by a residential section of middle-class homes; some of these have been serving as rooming houses and student residences in the past two decades.

Town and gown relationships have been generally excellent over the years. In the fall of 1956 there was one incident which attracted some attention. Following a homecoming victory, a large body of students demonstrated through the major business district and then "crashed" one of the large theaters with the idea of getting a "show on the house" for the entire group. In gaining entrance to the theater there was some minor destruction of property. Two or three police officials became involved and one of the police was roughed up in the process. A protest to the college administration came from the theater management, a group of businessmen, and a number of irate citizens. An ensuing meeting between Chamber of Commerce representatives and some college officials resulted in an agreement regarding the prevention and the handling of future student demonstrations. Except for an occasional minor display of student enthusiasm, none of which has led to any serious difficulties, relationships between the community and the college have been at the level of peaceful coexistence. In actuality, there is a lack of any real communication between most of the Two Rivers citizenry and the majority of the college staff.

Most of the Kingston campus is located within a six-block area. The oldest building on the campus accommodates both administrative offices and classrooms. The library, built in the late 1920's, contains about the average supply of books for an institution of this size. There is one large men's residence hall and one large and one small women's residence. Among the newest buildings on the campus are a chapel-auditorium and a separate music building. Some of the buildings appear rather old and weatherbeaten. The college is not known for the beauty of its campus.

The college, in essence a liberal arts institution for the past 75 years, is affiliated with the Presbyterian Church. The relationship with the church has changed over the years and has been tenuous in the past two decades. However, several people on the board are members of the clergy in the Presbyterian Church, a number of other prominent members are active in the church as laymen, and some are recognized leaders in midwestern industries. Dr. Angus Shulman, president of the college, is 49 years of age and came to Kingston four years ago after a successful career as minister of a large metropolitan church.

The college is one of eight institutions in the Tri-State Conference, a relationship initiated in the 1920's largely for athletic purposes. Since then the college administrations have found other grounds for perpetuating and intensifying the work of the conference. All schools are accredited by the North Central Association and generally recognized as some of the better liberal arts colleges in the Mississippi Valley and in the Midwest. Within a 75-mile radius of the college there are a number of other institutions of higher education, including one large state public institution and four other private liberal arts colleges, one of which is also in the same conference.

The faculty, composed of some 80 members, is rather heterogeneous in training and background: a majority obtained their graduate degrees in Midwestern universities; approximately a third have their doctorate degrees; 60 per cent have received their appointments since 1955; 30 per cent of the instructional staff have joined the faculty in the past two years; less than 20 per cent took their undergraduate degree at Kingston; and no more than 40 per cent are members of the Presbyterian Church.

The total enrollment at Kingston in recent years has varied between 750 and 850. The student body, with relatively few exceptions, is from the immediate Midwest. A little over 65 per cent of the entering student group comes from the state of Illinois, with 25 per cent (commuters) coming from the community of Two Rivers and another 20 per cent coming from a radius of 50 miles. About 20 per cent live in Chicago or nearby suburbs. The great majority of other students have their homes in the states of Wisconsin, Minnesota, Iowa and Indiana. A small number have their origin in the Northeast (5 per cent) and even fewer in the Far West (.5 per cent).

There is considerable variation in the religious background of the students with the largest number listing the Presbyterian, Congregational and

Methodist denominations. The next largest proprotions come from Episcopal, Lutheran, Catholic, and Baptist backgrounds, in that order. A few students each year list the Christian Science, the Jewish, or the Unitarian faiths, and never more than three or four give any other single religious origin. Less than 5 per cent on this campus list no religious affiliation. Required chapel was dispensed with early in the 1950's, but all students need credit in two courses in the area of religion to meet graduation requirements.

The proportions of men and women in recent years have been approximately 55 and 45 per cent respectively, with a greater number of men represented in the commuters from the local community. Never more than 1 to 2 per cent enroll from an independent or private school background. The distribution of entrants by standing in their high school classes in recent years is about as follows:

First quarter	45 per cent
Second quarter	28 per cent
Third quarter	20 per cent
Fourth quarter	7 per cent

College Board Scholastic Aptitude Test (SAT) scores are required of all entering students. The mean scores are 490 for the Verbal test and 515 for Mathematical. Presently, five out of every six applicants are accepted for admission and three out of four actually enroll. Major considerations for admission include 15 units of high school work, only 4 1/2 of which are restricted to English and social science. There are no definite prescriptions for natural science, mathematics or foreign language. Recommendations and SAT scores are other considerations.

The number of applicants and the size of enrollment has increased gradually in the past eight years, but the mean aptitude score has remained relatively stable. The source of students and the general type (background, interests, aspirations) has not changed noticeably in several decades, except for one thing. At one time, athletics were emphasized much more at Kingston, and the football and basketball teams were rated among the best in the state. The college had a well-known recruitment program for athletes from much of the Midwest. At that time, Kingston competed with a number of larger schools outside of the conference. A broad but somewhat de-emphasized inter-collegiate athletic program exists at the present time.

Differences among the entering student populations is one way in which the eight colleges in the Tri-State Conference vary. The type and size of communities in which they are located represent another obvious difference, while they appear to be rather similar in such things as the scope and emphasis of curricula and student-faculty ratio. The Kingston students would rank with the lower group of colleges in the conference from the standpoint of ability; the entering students in two colleges at the top of the eight have mean aptitude scores more than one-half standard deviation higher on both the Verbal and Mathematical tests. In these two colleges with the higher ability students, approximately 70 per cent come from the bottom two quarters. These same colleges are also somewhat more productive of graduates who later obtain their doctorate degree than is the case with Kingston graduates. The number from the latter institution, however, who go on to receive their Ph.D. degrees, is a little above the national average for four-year liberal arts colleges.

There are a small number of fraternities and sororities on campus, all of which are chapters of national organizations. (These organizations exist essentially for social reasons, with the students in only one fraternity exhibiting an above average interest in academic achievement. The personnel office staff report an increase in discipline problems in recent years. Drinking has been labeled as a real problem of late, also. Most of the discipline problems and a good deal of the drinking seem to be concentrated in four of the fraternities.) A fairly large number of independent men and women are active in the Independent Students Association, also a national organization. Beyond this, there are the usual societies and clubs found on most campuses organized around common interests of the participating individuals. The extracurricular program in music, art, drama, and publications appears to be rather extensive with the majority of students participating in one or more of the activities.

The stated purposes of this institution have remained much the same over the years. Though "dedicated to the proposition that its purpose may best be achieved through devotion to the liberal arts and sciences," the school also has a vocational orientation which is euphemistically expressed as preparation of young people to "cope intelligently, effectively and responsibly with the complex and changing conditions of life in modern society." A report in former years by an accrediting agency pointed out that this college seemed to stress specialized knowledge for vocational achievement. Some of the faculty continue to be disturbed by the age-old controversy of general education versus vocationalism, arguing against an over-emphasis on the latter in committees and faculty meetings. Apparently, administrators and leaders in this institution have been struggling with the problem, never having arrived at a clearcut decision, whether their school should be basically a liberal arts college or an urban institution serving the general needs of the community.

The curriculum at Kingston gives emphasis to the liberal arts and the sciences. The course work available is somewhat greater in scope than other colleges with a similar program. Music is an area of particular strength, and as in a number of colleges of this type a separate degree is granted in this one area. Students are encouraged to combine some courses in music with other work in the liberal arts. The language department has also gained a reputation in the state. The educational program provides for advanced placement for freshmen with exceptional ability, for independent study for juniors and seniors who have received honors recognition and for special combinations of work with professional schools in law, medicine, engineering, and nursing.

Two adjuncts to the regular educational program are the Evening College and the Summer Session. Though credits may be transferred to apply toward graduation, the two programs are separately administered.

Kingston also differs from most other institutions in the Tri-State Conference in the amount required for tuition and board and room fees; only one of the other eight colleges has current costs listed at the same relatively low level. The six other colleges have tuition rates which vary from $100 to $300 higher than the Kingston tuition. A variety of financial aids are available to the students through scholarships and grants-in-aid. Capable, needy students have no difficulty obtaining financial help, and special loan arrangements can be made for those not qualifying for scholarships and grants. Quite a large group of students also seek and find employment in the community besides those regularly employed on the campus.

The major educational officers in the college are the president, the dean of the college, the registrar, the dean of students, and the deans of men and women. Student advisement, especially from an academic standpoint, is a well-planned phase of the total program. An advisor is assigned to each student early in his freshman year and he serves as the student's principal counselor for two years. All course work is planned with the assistance of this staff member.

The work of the advisors is supplemented by the student personnel office staff. This group, responsible for supervision of student life and resident housing activities, also serves as a personal counseling staff. Their work is assisted by dormitory residents and upperclassmen, selected and trained, who serve as residence counselors. The personnel program is an active and functional one, seemingly more involved in student life and activity than is the case on many another campus.

Current Situation

During the 1959-1960 school year President Shulman appointed an evaluation committee of administrators and faculty, asking them to spend the ensuing summer and school year in preparing a report for the faculty and the board. In brief, the committee has been asked to review the present status and recent "accomplishments" of the college and to consider the future of Kingston and the education of students at the college in the light of the expected conditions of the next decade. The president, together with the Education Policy Committee, was brought to this decision partly as a result of recently published analyses of higher education's role in a rapidly changing world. He has also become increasingly aware of the growing concern in the minds of faculty about Kingston's rank on criteria of quality, especially as they compare their college to other colleges in the Tri-State Conference. Some other Mid-western colleges have been seen as changing more rapidly and as surpassing

Kingston in the last decade in the number and presumed quality of the students drawn. President Shulman has more recently been provoked by the expressed attitudes and sentiments of a small number of the younger, newer members of the teaching staff regarding inadequacies both of the local program and of the students who attend. Two of the humanities faculty have been very vocal in stating that the college admits students who should not be in college, arguing that many have poor preparation in Math and English and should be screened out. The latter development has created some minor difficulties, both among individuals and departments, and has not helped with staff morale in the past two years. The culmination of all this is the temporary committee which is being asked to "diagnose" the school in current and recent historical context and to bring forth recommendations which might be basic to new policy and plans for the future. Members of the faculty (nine months appointment) are receiving six weeks' summer salary in compensation for their efforts, and have been asked to refrain from any other commitments for at least those six weeks.

The memorandum from the president to the committee chairman and members listed both areas of concern and problems for the group's "diligent and concentrated consideration." The following are a few excerpts from the memorandum.

> 1. Kingston College, undoubtedly not unlike many others, has been described as a static institution in a changing world situation. We have been accused of not preparing to move with the times. More specifically, some of our own colleagues are apprehensive about our readiness to select from the much larger number of students who will be applying in the years to come and also about an increasing number that can optionally be accommodated with the present limited plans and budget for increased facilities. It is likely that in a very few years we will have ten applicants for every vacancy. Is growth in numbers a valid or any criteria of progress? Should we expand? Should we gear our college program to a doubled enrollment? What type of students would we get under such a circumstance?
>
> 2. In the light of a "new world" and the new and increasing demands upon the citizens living in it, and in light of what we as academicians expect from the graduates of our college, I ask you to give your most serious attention to (a) the content of our curriculum with the possibility that it may need restructuring and require different emphases from the one to which we are accustomed, in order to prepare students for life and problems that cannot be fully assessed in the present, and (b) to educational procedures, to the conditions of effective teaching, to the creative use of "free" time, and to investigating what factors make for more effective communities of learning.

3. In my few years with the institution, I have become somewhat concerned about our educational accomplishments and our services to the general community in the light of Kingston's objectives and the major purposes of our program. We have been informed of the inability of this college to define its role. I will increase the assignments of this committee unduly by asking you to consider once again the question: "What kind of college should we be?" However, I doubt that you can deal with any of the other issues I have raised without very serious attention to functional objectives. Can we continue to serve, directly or indirectly, Two Rivers and the surrounding community, attempting to meet the needs of its citizens as an urban institution, and still do justice to the development and education of the young people who represent our major student body? Can we successfully fulfill the two roles? Should we seek to provide more of the cultural leadership and intellectual atmosphere, which go hand in hand with the true liberal arts college, and forego some of the aspects of our program which some of the faculty have referred to as "service enterprises"?

4. Again judging by comments from some on the staff and taking a cue from some writings on students and their attitudes in recent years, it seems that we have not fully considered the person to be educated. Some of the staff have commented about the limitations of our own student clientele, suggesting that those who enroll here are not of the caliber, in various senses, of those in many another liberal arts college. A few have suggested that we establish an image of the "ideal" student for a program such as ours and recruit only such students. Certainly we are already restrictive in our admissions policy. To what extent should we become more so? On what basis should we decide to do so? How does a changed policy of recruitment and selection fit with the objectives of the college? This seems to me to be an area of confusion and limited knowledge. I ask you to also give time to the Kingston student: who is he and who should he be? Please help clarify the picture for all of us regarding such major considerations.

All of these problems concern the students at Kingston, and it is with them that we should be most concerned. They are the raw material of our labors and, someday, will be the finished product for which we will be partially responsible.

The problems I have outlined above cannot be solved by conjecture. We need facts, data, information. Nor will these alone settle the issues before us. But they will give us a sound foundation from which to start. Therefore, I would request that you attempt to define, among other things, a program of self-study research on students and matters bearing on their welfare and education which Kingston might follow in the coming years.

Case Study Report

KINGSTON COLLEGE

Franklin Bacon
Medical College of Virginia

Diagnostic Report on the state of health of Kingston College as determined by the Diagnosticians assigned to Group B, under the painstaking guidance of George Hood, chief of staff and recorded by an intern, whose jaundiced eye may account for any reporting which may be off color.

PATIENT'S HISTORY: Normal birth prior to Civil War I. No episodes of importance to indicate anything other than a normal personality development. Has always gotten along well with family and friends which may be one of the underlying factors in present difficulty. Her close touch with community and desire to please may be contributing factor to frustration she is now experiencing.

She has had some sterling qualities which the course of years has tarnished and as she approaches this advanced period in life finds to her dismay that those qualities which in the past have caused her to be held in esteem are no longer attractive and in fact have turned to a liability.

Her lack of perception for the need to keep in touch with the times and needs of the younger generations has resulted in a serious depression with attendant psychosomatic problems.

DIAGNOSIS: "Sick, sick, sick" -- Minority report filed by some of the diagnosticians indicates this "Ain't necessarily so" but there are symptoms of chronic illness present. . . with a fever of undetermined origin.

SYMPTOMOLOGY:
1. Rumblings of the faculty
2. Indications of malfunction of the president
3. Atrophy of student body
4. Episodes of disorientation, growing in frequency and severity.

CLINICAL DATA NEEDED: (Because of possible misinterpretation of this information by a lay group, terminology will now be couched in professional educational terms which will be equally confusing.)

1. The stated goals and purposes
2. Followup study on recent graduates:
   a. What are their current pursuits?
      (1) Attending graduate schools
      (2) Business World
      (3) Housewife, etc.
   b. What do they regard as strengths and weaknesses in their college preparation?
3. Retention study to indicate:
   a. Types of students
   b. Reasons for withdrawal
   c. Unrealized purposes for attending
4. Assess public image of college through:
   a. Interviews with high school counselors serving this area, church constituents concerned, and business leaders of the community
   b. Questionnaires administered to entering freshmen
   c. Community survey to determine need for present type of college
5. Depending upon above data, the following information may be needed:
   a. Reasons students selected Kingston College
   b. Trend studies of major fields analyzed quantitatively and qualitatively

OBSERVATIONS: Knowledge of all of the symptoms and indicated treatment is not enough. The tranquilizing effect of spurts in enrollments is offset by the disturbing condition of mass turnover in faculty. Further study may reveal radical surgery is indicated and preparation should be made for large transfusion of new objectives, new ideas, and new ways of implementing these compatible with those good factors already in action.

PROGNOSIS: Early demise unless immediate and radical treatment is soon underway. In the event of breakdown in the treatment and cure is not effected, it is respectfully suggested that the coroner having jurisdiction (in this case the North Central Association) be alerted to impending death and that the remains be disposed of as quickly as practicable upon expiration.

Submitted by the Examiner for the Diagnostic Clinic

Case Study Report

KINGSTON COLLEGE

Barbara A. Chandler
Georgia State College for Women

The memorandum of the President to a temporary committee appointed to consider college problems and needs served to initiate the discussion. The group approached the problems posed as members of the committee. Concerns related to student mortality as reflected in the substantial drop-out rate were discussed, but it was decided to take a broader approach for the action of the committee. The central focus was on the final statement of the President:

> The problems I have outlined above cannot be solved by conjecture. We need facts, data, information. Nor will these alone settle the issues before us. But they will give us a sound foundation from which to start. Therefore, I would request that you attempt to define, among other things, a program of self-study research on students and matters bearing on their welfare and education which Kingston College might follow in the coming years.

The first problem considered was the make-up of the steering committee to recommend to the President -- key administrative personnel, faculty members representing different areas. Subsequently, members representing other groups should be brought in as working members of committees -- students, trustees, alumni, community.

As questions were raised in the groups, they were tested: "Will this make a feasible research problem?" We tried to steer our thinking to how we could tackle the problem -- a general approach rather than getting into detailed technique. We tried to avoid the "piecemeal" approach, feeling that the problems we were dealing with were interrelated.

Some factors and problems brought out in the discussion indicated the necessity of developing faculty understanding and acceptance of the importance of the ongoing research or evaluation activities. The limitation of time was noted. A three-to-five-year plan was suggested as a continuing research project with goals set for completing certain phases of the project.

The need for a professionally trained director of the project and a research staff was recognized. The group assumed that upon recommendation the President would employ such a person. It was felt that he and the President would coordinate the research at Kingston with that in other colleges in the Tri-State area.

It was anticipated that several subcommittees would work on different areas. However, our group selected one and focused on students and the major task of developing a comprehensive description of the characteristics of the student body. We felt that gathering and interpreting such information would be a continuing function of the committee on student characteristics.

Having defined this area for more intensive attention, the group held a short brainstorming session to get out as many characteristics as possible that we would like to know about students. Fifty different characteristics were listed and it was noted that information regarding half of them is available in the files. Such facts can be gathered and recorded on IBM cards, giving an immediately available description of the student body. A locally developed questionnaire would be used to obtain information not in the files. The interview and tests of values, needs, and environmental image will contribute further information.

The group discussed (1) problems related to getting the questionnaire filled out and (2) how to get information to the faculty and administration so they will be able to use it in decision making and planning. Some ways of communicating information were suggested:

(1) Periodic reports and an assembled report to the faculty.

(2) Research chairman have an "open door" policy and invite faculty, administration, and others to come in for information.

(3) Meet with faculty groups -- use case studies.

(4) Newspaper stories.

(5) Use other studies for comparative data. "Feedback" should be to administration, faculty, students, trustees, alumni, and community for their consideration and use.

Case Study

ROCKY MOUNT UNIVERSITY

Rocky Mount University is the largest of six public institutions of higher education in its state, and the second largest institution of higher learning in the Rocky Mountain region. It is located in a small town about 40 miles south of an urban center. Its relations with the local community are cordial. The community for many years has depended on the university for its commercial survival but is becoming more independent as various other types of service agencies are attracted there.

The university is controlled by a Board of Trustees, six men appointed by the governor for terms of six years. The university is financed through tuition and fees (25 per cent), state appropriations (70 per cent), and miscellaneous sources (5 per cent). The state in which it is located has a low tax base, since it contains large portions of government-owned land and has attracted relatively little industry.

Since the university opened its doors to 28 students in the year 1881, it has experienced a steady, and sometimes spectacular, growth. Until the great influx of World War II veterans, beginning in 1946, the rate of growth was fairly constant, whereas the period of 1946-50 was an unnatural one, occasioned by heavy veteran enrollments, reaching a peak in 1948 and falling off sharply thereafter. Following a three-year leveling period, an unexpected and sharp increase in enrollments began in the autumn of 1954 and has continued unabated to the present.

Enrollments at Rocky Mount University since 1920 are as follows:

1920 - 2,000
1940 - 2,800
1946 - 6,500
1948 - 7,800
1950 - 7,200
1952 - 6,700
1954 - 7,400
1956 - 8,900
1958 - 9,500
1960 -10,000

In the academic year 1959-60, its several colleges and schools conferred 1,800 degrees in 45 fields of knowledge. Total university personnel number approximately 2,500, including the equivalent of more than 520 full time faculty members. Education and general expenses for the year 1959-60 exceeded $9,000,000.

Non-Resident Student Enrollment

A special characteristic of Rocky Mount University, not common among state-supported institutions, is the high proportion of non-resident students in its student body. The fact that 37 per cent of presently enrolled students are from outside the home state, representing all 48 states and a number of foreign countries, gives a cosmopolitan flavor to the institutional environment. The administration considers this desirable from an educational viewpoint, feeling that it gives an added stature to the university; it also presents a challenge to the faculty and the administrative officers to take full educational advantage of this condition. Since many more applications for admissions will be received in the future than are approved, and considering that the university has no particular obligation to accept these students, the flow can be controlled and channeled to foster a balanced growth and development of the university. Non-resident tuition and fees are currently at a relatively low point, $350 per year, and have been going up about five per cent each year.

For reasons unknown to the administration, heavily disproportionate groups of students apply to the university from the urban centers of Chicago and San Francisco. Part of the reason for this is thought to be the influence of heavy enrollments of war-time students from these areas, and the influence of these persons on new students. Of the resident students, approximately 50 per cent are from the state's largest urban center 40 miles to the north. Students from Stoneham, the community in which the university is located, account for an additional 15 per cent of the residents.

The total student body is made up of approximately 30 per cent women and 70 per cent men. About 20 per cent of the students are married. Enrollment in the university's graduate programs has increased during the past five years, and at present makes up 15 per cent of the total. It is expected that, barring certain administrative decisions, the enrollment in the graduate programs will increase by about 150 per cent during the next decade. Heaviest enrollment is in the College of Arts and Sciences. The Schools of Engineering, Business, and Education account for the next heaviest enrollments.

The university has little need for a recruitment procedure. However, through attractive brochures and announcements, it indirectly seeks to advertise the natural advantages of its location and programs. A sizeable admissions office handles the large number of admission requests from out of the state, and keeps regular tallies of the number of requests from various states, the proportions of students enrolled from the home state compared to non-residents, etc. The admissions office has been requiring applicants to take College Board tests for the last three years. These have not been used as a basis for selection of students, but will provide the university with data which they may seek to use at a later time. Up to the last five years, the university accepted high school graduates in the upper 50 per cent of their class from out of state. In the last two years they have selected about 75 per cent of the total applying group, on the basis of high school grades, class standing, and letters of recommendation.

Admissions in the future will be partly guided by the number of home state students applying for admission; the Board of Trustees of the university is studying the question of continuing the policy that graduates of the state's high schools will be accepted to Rocky Mount University on the basis of graduation alone. Therefore, as this group increases, the Board has suggested that the university control its total growth by selecting from the out-of-state students that number which, in addition to the home state students applying, will make for a total enrollment which they desire. The admissions office, therefore, is studying the several possible techniques it can use to select the most desirable out-of-state students.

Informal Student Activities

Fraternities and sororities at Rocky Mount University represent the major focus for organized student activities. Membership in student government and leadership in almost all student affairs is dominated by members of Greek organizations. Popular extracurricular activities are skiing, participation at university meets and games, weekending in the urban center to the north, picnicking in the nearby mountains, and drinking and dancing at bars and dance halls. Activities on the campus which involve the largest numbers of students are mainly "spectator" events: student government elections, student talent reviews, a foreign film series, a regular series of lecturers on campus, appearances of musicians and three separate "weeks" devoted, respectively to American Politics, Religion in Today's World, and International Relations.

Drop-outs, Student Image, etc.

The university suffers a rather heavy drop-out of students after the sophomore year. It is thought that this may be due to withdrawal of many non-resident women who seek only a two year "finishing school" education, and possibly also to the departure of some resident students accepted on the basis of high school graduation, who cannot meet the academic requirements of the university. Transfers from other institutions at the junior year make up for about one-third of the total number of students dropping out after two years at the university. The transfers are primarily non-resident students, thought to be from locations similar, in general, to those from which the drop-out students came.

There is a general acceptance among the College of Arts and Sciences faculty that non-resident students see the university as a "country club," and attend it largely because of its nearness to other pursuits which they seek, almost all of which are extracurricular. The administration conducted interviews with a sample of students about four years ago, seeking to find out their interpretations of the university's special qualities; the "country club" attitude was only partly substantiated. Several other factors, including academic vocational, and circumstantial, seemed to be playing a part in the students' choice in this institution. It is not known how many students dropping out transfer to other institutions or cease their education entirely. In general, the resident students show an aptitude level about 10 per cent lower than students entering Rocky Mount University from other states. Further, the number of home state students who are of exceptional ability is considerably smaller than that group from out of state. It is thought by the administrative officials that many high quality in-state students attend Eastern institutions of higher prestige.

Problems

1. Rocky Mount University has sought rather large increases in funds from the state during each recent biennium. It has based its requests largely in terms of (1) increased costs of maintaining its level of operation; (2) the gradual increase in graduate programs (inherently a more expensive endeavor); (3) increases being given to other state institutions; and (4) enrollment projections.

Among other things, the appropriations committee of the state legislature has noted (a) the high proportion of non-resident students enrolled at the university; (b) the net loss to the state of the difference between out-of-state tuition and costs of educating a student; (c) the rather serious drop-out at the end of the sophomore year; (d) the rather limited criteria of selection used in securing out-of-state students. The committee has asked the university to make its case for having the large out-of-state enrollment, and has asked that the university present alternative selection systems, based on research into the predictive value of various criteria of selection.

President Garland turned this problem over to Vice President Stainton. "Veep" has appointed a committee and charged them with investigating these matters:

(1) the arguments for and against having a "cosmopolitan" student body; a definition of when a student body becomes "cosmopolitan" in terms of the number of non-resident students

(2) the probable reasons for withdrawal of students at the end of the sophomore year

(3) the relation of these two factors to the university's selection system, and what changes might seem necessary in the future.

2. While the dean of men's office has not been plagued with extravagant student misbehavior during the years, neither have they felt particularly satisfied with the extracurricular activities which dominate the students' unscheduled life. Attendance at university functions of artistic, intellectual, or academic value tends to be low, while sports events, and university "fun" events receive a great deal of attention.

A faculty committee on student activities has suggested that students' use of leisure time reflects the essentially non- or even anti-intellectual attitude which dominates the campus. They have recommended that the student personnel office conduct an opinion study to determine students' attitudes and values about learning and the use of leisure time.

The committee was spurred on in its discussions by an article appearing recently in New Nation magazine in which an Amherst dean rated the country's colleges, Rocky Mount was placed in Category C-2, "undistinguished program with mediocre student body."

The committee, led by Psychology Professor Blunt, asked that the survey seek answers to these questions:

(1) What special characteristics, intellectual and other, do students attribute to Rocky Mount?

(2) What is their evaluation of Rocky Mount five years after leaving?

(3) What intellectual activities have the greatest impact during four years at Rocky Mount?

(4) What intellectual pursuits do students feel could comfortably be built into their leisure time?

(The dean of students has expressed his attitude that students entering the university in the last five years have shown a surprising increase in intellectual interest. He has suggested that the students merely are opposed to organized intellectual activities, and that "they learn as much over their beers as they do in classes.")

3. The Board of Trustees, at its last meeting, issued a resolution to President Garland expressing deep regret at the recent adverse publicity given the university in the press of the state's biggest urban center. The publicity referred to described the university as "a virtual country club, which attracts beatniks, play boys, bohemians, and rich kids, and then, over four years confirms their image of the university as a party school, where the gentleman's 'C' can be achieved with one night's study per week." President Garland, responding to the resolution, told them that the bad publicity in the press came

from an editorial staff biased in favor of the state's land grant college. However, he added that "we ought to get to know more about what our students think of the university and why they come here." The Board of Trustees concurred in that opinion.

On his way home from the Board meeting, President Garland wearily opened his portable dictator and dictated a memo to Dean (of students) Ash:

Jack:

We need information on (1) the students' view of Rocky Mount and their reasons for attending here; (2) the kind of students we attract, personality-wise; (3) the study habits of students as related to their accomplishments. These are touchy things to get at. Would you and Fred Ratner in the Research Bureau talk this over in terms of a study proposal? Clear your calendar for 10:00 a.m. Monday to review the proposal with me.

(signed) Harlan

Case Study Report

ROCKY MOUNT UNIVERSITY

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Several pieces of descriptive data about Rocky Mount University seem especially relevant:

1. It is a state supported institution.
2. Thirty-seven per cent of the current enrollment is accounted for by out-of-state students.
3. The admissions policy is open-door for both in-state and out-of-state applicants.
4. The University suffers a heavy drop-out after the sophomore year.
5. An Amherst dean got himself quoted in the New Nation magazine as describing Rocky Mount University as having an "undistinguished program with a mediocre student body."
6. The press in the state's largest city described Rocky Mount University as a "country club. . . where the gentleman's C can be achieved with one night's study per week."
7. The publicity has frustrated the trustees, who have frustrated the president, who has frustrated the dean of students and the man in the research bureau who, if they were to read our analysis, would probably resign before Monday at 10:00 a.m.

Within this descriptive framework, our approach in the case -- rather than to simply identify obvious problems -- was to determine which data would most meaningfully lead us to identify the problems that exist, to identify why they exist, and, consequently, to determine the significance of the problems in relation to the educational objectives of Rocky Mount University. We did, however, go about our analysis by focusing on the three obvious concerns of the University: (1) the high percentage of out-of-state students, (2) the high drop-out rate, and (3) the non-academic image of the University. We identified a fourth concern (for us, at least) which gave us confidence to move full speed ahead: the obvious lack of systematic information available and the obvious non-use of available information!

The first step would be, therefore, to look at the data we have available and then move on to determining what additional information we need. We know that applicants are required to take the Scholastic Aptitude Test. We also know that these test scores are simply filed away. An analysis of test scores would show us several things which may be significant: (We use the word "quality" advisedly: quality as determined by test scores alone.) (1) quality of all applicants, (2) the quality of in-state students versus out-of-state students, (3) the quality of applicants who were admitted and who enrolled versus those who were admitted but did not enroll, (4) the relation of their SAT scores to freshman year average, (5) the quality of those rejected, (6) the quality of those who drop out, and (7) the quality of those entering specific departments.

After this analysis is done, there are several questions, the answers to which will assist Rocky Mount University in dealing with her problems. Let me suggest a few: (1) What is the relation of test scores to drop-out? Are we losing the "best" or the "worst"? Are they from in-state or from out-of-state? (A member of our committee suggested the possibility that Rocky Mount University may find that they are losing the "best" by transfer -- that a conclusion may, therefore, be drawn that high test scores represent a greater mobility power. In this case, what effect would this revelation have on setting admissions standards?) (2) Do out-of-state students show high SAT performance? Do they attain better freshmen averages? What impact would these facts have on the student body? on admissions? (3) Do certain departments attract those with higher potential as measured by the SAT? What is the prevalence of out-of-state students in these departments? Do these departments have an honors program? Who teaches in these departments? (4) What percentage of students who apply fall within given ranges of SAT scores? How can this be related to admissions standards and enrollment projections? What support does this give to selective admissions versus open-door policy?

After we see, by a quality measure, who is dropping out, we can seek other data to clarify the drop-out problem. For example, (1) Why are they leaving? -- grades, transfer, discipline? (2) Where are they going? -- "comparable" schools, "better" schools, "easier" schools, etc.? (3) Are particular departments being drained? (4) One third of the drop-outs are replaced by transfers into RMU -- who are they? Why did they transfer?

We can move from here to data, other than SAT scores, related to out-of-state students. Things we might want to know would include: (1) impact of out-of-state students on the "flavor" of the college. Are they the trouble makers; the few who participate in cultural activities; the campus leaders; -- do they remain a "distinct" group on campus, or are they involved in the tone of Rocky Mount University? (2) What are the family incomes of the out-of-state students? Is the low state tuition the significant reason they attend? (3) Do they remain in the state after they graduate? Can these data be used in justifying such a large number of out-of-state students?

The third area, the "image" of RMU, would require an extensive survey of academic and non-academic factors. One tool for defining the image would be Pace and Stern's College Characteristics Index, which could be given to faculty, students, administration, trustees, and alumni. It may be helpful to analyze the results from students and alumni by in-state and out-of-state. Questions that should be answered in looking at the image of the college would include:

(1) Is the public expression of the image a valid expression?

(2) What factors correlate to the "image"?
  (a) internal emphasis (academic, non-academic)
  (b) nature of student government and characteristics of its officers
  (c) heterogeneity of student body
  (d) admissions data and policies
  (e) brochures (you will recall the college bulletin reveals snow-capped mountains and students on skis)
  (f) impressions which may be transmitted by teachers attending summer institutes; i.e., what is the atmosphere in summer school?
  (g) socio-economic background

(3) With what do students identify?
  (a) the school
  (b) the dorm
  (c) the fraternity or sorority
  (d) the class

(4) And then, what influences this identification? . . . athletic emphasis, weekend activities, or lack of activities, percentage of commuters in the student body, the accessibility of cultural events -- are cultural events a part of the total program or an "extra" (especially from a financial point of view)?

(5) Where and when do students study?

There are other useful approaches which RMU may wish to pursue in working with her problems. For example, there are other state universities with similar problems. An interinstitutional study may be helpful. Also, the perpetual collection of and availability of data is essential. RMU now has a research bureau, but the case says "we think" or "it seems" too often for us to believe that anyone is at work there.

The final observation and suggestion from our study group is one which sums up our approach to this case. Someone -- the trustees logically -- should provide a statement of purpose for RMU. Not until RMU knows what they should be about will they know if they are succeeding or failing. Indeed, the problems upon which we focused may not be problems at all. With clearcut objectives and data for analyzing the progress toward these objectives, RMU can begin to know itself, to perpetuate the successful, and alter the undesirable.